

# AUDUBON

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# AUDUBON MAGAZINE

A BI-MONTHLY MAGAZINE DEVOTED TO THE PROTECTION  
AND PRESERVATION OF OUR NATIVE WILDLIFE

*Our Motto: A BIRD IN THE BUSH IS WORTH TWO IN THE HAND*

*Acting Editor, MARGARET BROOKS*

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*THE STAG AT EVE. Public sentiment is gradually awakening to the need of protecting and preserving those mammals whose numbers have become seriously depleted.*

Photo by Paul J. Fair

# AUDUBON MAGAZINE

MARCH-APRIL, 1941

## Our Rarer Mammals

By Glover M. Allen

IT IS rather remarkable that in the centuries that have passed since the discovery of the New World, very few of our native mammals have been quite exterminated, in spite of the thoughtless and profligate use that has been made of many of them. Nevertheless, a number of species have become more and more reduced until at the present time their stocks are limited and their remaining range circumscribed. Fortunately, we are just beginning to be conscious of this, and a public sentiment is gradually developing for the preservation of at least those that have an obvious human interest. Indeed, it becomes clear that if we would hand on our heritage for the enjoyment of our descendants we must make some provision for a wiser use of our replaceable resources. Conservation is being brought increasingly home; waste must stop, valuable stocks must be built up again, legitimate use must be based on adequate knowledge. For conservation does not mean mere protection or preservation; it implies the ability to "eat our cake and have it too." How this may be done, we are just beginning to learn.

The mammalian resources of our continent are still manifold and of varying significance. Our forefathers, when they landed on these shores,

found themselves competitors with several of the larger species. Such carnivores as the wolf, mountain lion, and black bear, which destroyed their sheep, cattle, and pigs, had to be reduced in order to protect their own scanty food supplies. Again, the pioneers, pushing westward across the Alleghenies, found that farming could not be carried on successfully in competition with herds of bison that trampled down or ate their slender crops or even demolished their very cabins by rubbing their shaggy hides against them. Hence the bison were recklessly slaughtered for meat and hides, or merely eliminated. Larger species must obviously be relegated to the wilder and less habitable regions, such as large public reserves where other human interests will not suffer. On the other hand, fur-bearing species that form a source of income to the trappers and buyers come little into competition with man, but disappear before him, leading to the depletion of a valuable resource. Whales and seals, eagerly sought for their products, are too easily depleted with modern contrivances long to resist intensive persecution.

There are many smaller species to which little heed is paid, but which nevertheless serve their use in various ways and should not be too wantonly

or thoughtlessly swept away. The ubiquitous meadow mice of our fields and the white-footed mice of our woodlands afford a staple food supply for a series of predatory birds and smaller furbearers—ermine, marten, fox, Hawks and Owls—which aid in keeping their numbers from becoming too great. Moles, gophers, marmots, prairie dogs, and ground squirrels, in reasonable numbers, are valuable agents in soil improvement, for their tunnels and burrows serve to aerate the soil and help drain off surface water, while their digging activities help to mix the mineral and organic elements to the betterment of the soil.

Of the rarer mammals of North America there are some which actually seem to be represented by small numbers. In some cases, we may not yet know their special haunts; on the other hand, some may live solitary lives and their populations may be small and scattered, while others, formerly more common, have been reduced through human agency. In this last case, reduction may be due either directly to persecution, or quite as often indirectly to human activities that have rendered their habitats unlivable as by fires, drainage or clearing of woodlands. If such species are to be maintained, it becomes a matter of first importance to restore their former environment so far as possible.

Among the insectivores, the lowest order of placental mammals, the most remarkable of the vanishing species are the solenodons of Cuba and Hispaniola, *Solenodon cubanus* and *S. paradoxus*, respectively—the last surviving members in the New World of a group with narrow, triangular upper molars, known as zalambdodonts, whose nearest relatives now live in Madagascar. Fossil species are, however, known from continental North America, and indicate the probable source of the West

Indian stock. About the size of a large rat, with a fairly long stout tail, a flexible, elongate snout, and provided with enlarged front teeth, these animals are still found in small numbers in the rocky forests of portions of Santo Domingo. If any still remain in Cuba, we hear nothing about them. The most likely place in which they might be sought is the forested mountains of the eastern end, where, in 1910, two Swedish engineers engaged in road construction secured a live one. On account of its secretive ways and rather remote habitat, it may possibly still survive in this district; on the other hand, the introduced mongoose, which is at present widespread on the island, may already have compassed its destruction.

Probably no species of American bat has been directly exterminated by man, but several are so little known that one must regard them as rare or vanishing. Most conspicuous among these is the black and white 'death's head' bat, (*Euderma maculatum*), the only known member of its genus, a long-eared form having a wingspread of nearly a foot, and with three white spots on the black of its upper side, like the conventional marks of a 'death's head.' Only eight records of this bat are known—from localities around the rim of the Great Basin in California, Arizona, New Mexico, Utah, and Nevada. What its peculiar habits are that it should seem so rare, if its numbers actually are small, remain unanswered questions. One of the known specimens was found dead in a water-tank overflow, another on a fence, while a third obligingly entered a biological laboratory.

Very different is the fish-eating bat (*Pizonyx vivax*), which seems to be confined to rocky islands in the Gulf of California. For a long time this bat, remarkable for its large hind feet with strong, recurved claws, was known



Photo by William Rush

**THE BISON WAS RECKLESSLY SLAUGHTERED.** Formerly ranging over most of the Great Plains, it now exists only in game reserves, zoölogical parks, or as privately owned herds.

from but a single specimen from Lower California; later a dead one was found on the Mexican mainland; then finally more were discovered sheltering by day among broken rock on a few of the sea islands of the Gulf. Subsequent study revealed that the diet consists of small sardine-like fishes which the bats hook up from the surface of the sea by night. So rapid is digestion, however, that in order to prove the presence of fish remains in the stomachs, the investigating naturalist, Dr. W. H. Burt, had to be on the scene early to secure incoming specimens before daylight. Except for a few Owls, this bat is not known to have any natural controls, so that the remoteness of its island home and the nature of its 'hideout' will doubtless long serve for its protection.

An interesting case is that of the leaf-nosed bat (*Stenoderma rufum*), first made known in 1818 from a single specimen without locality. Of this bat and its original home nothing more was learned until 1918, when Dr. H. E. Anthony

announced the discovery of over two dozen well-preserved fragments of skulls found during his excavations in Cathedral Cave, Puerto Rico. Presumably, then, the original specimen had come from this island and may have been peculiar to it. Evidently it must once have been present in some numbers, but since no one has ever taken it alive in the intervening years, it is now believed to be extinct. Very likely it depended for its existence on a year-round plenty of various fruits of native trees, which, with the clearing of the land for agriculture, were largely destroyed.

It is unfortunate that large carnivores are unwelcome in agricultural regions, and they have been largely exterminated everywhere except in the remoter districts. Yet time was when wolves were so common in Massachusetts that the early colonists seriously contemplated building a 'high board fence' across a narrow part of Cape Cod to keep them out, and to make safe pasture for sheep and cattle on the outer peninsula. The



Photo by Fish and Wildlife Service

**WEASEL AND PRAIRIE DOG SHOULD LIVE UNMOLESTED.** *Elimination of prairie dogs might mean extirpation for the black-footed ferret which feeds on these rodents.*

last wild wolf killed in New England was probably in the middle '60's.

Black bears, however, still remain in some numbers in Maine, New Hampshire and Vermont, but except for occasional depredations among sheep in distant pastures, they do almost no harm and are seldom seen, even in places where they are fairly common. In Maine and New Brunswick, though, they are an important asset as a sporting animal, and numbers are annually taken during the open season. The black bear is perhaps almost the only species that has directly benefited from the automobile. Coarse bearskin robes were formerly much in vogue for sleigh-riding in winter, but as they are now no longer needed, the bears have some respite from persecution. The bounty on black bears should be abolished and their control trusted to the sportsmen who annually hunt them.

A far more formidable beast is the grizzly bear, which in early days was abundant from the foothills of the

Rocky Mountains to California. They even came out on to the plains to attack the bison. Now, however, they are nearly gone everywhere within the United States except in Alaska and in some of the western national parks and forest reserves. Owing to the uncertain disposition and truculent nature of the grizzly, however, the number that may safely be maintained on such areas must be kept to a practical limit and occasional dangerous individuals eliminated. The last grizzly killed in California is said to have been in 1922.

Among the smaller carnivores, several less common species are of special interest. Of the weasels, the very smallest is the least weasel (*Mustela erminea*), a slender-bodied and short-tailed animal, hardly eight inches in total length. In slightly differing races it has, nevertheless, an enormous range, from Scandinavia across to Mongolia, Japan, and Kamchatka, and from Alaska eastward to the Gulf of St. Lawrence, southward to Nebraska and North

## OUR RARER MAMMALS

Carolina. Yet it seems to have completely skipped New England and the northeastern regions, at least there are no records from these areas. It is believed to be a mouser, its small size enabling it to follow meadow mice in their runways and burrows, and hence it should be protected rather than killed on sight, as usually happens. Its chief natural controls are Owls, in the regurgitated pellets of which its bones are occasionally found, but otherwise little is known of it, and individuals are seldom found.

Another rare member of the weasel family is the black-footed ferret (*M. nigripes*), the only American representative of the Old World polecat group. The American animal is limited to the plains east of the Rocky Mountain foothills, from western North Dakota to northern Montana, and southward to Texas. Probably a limiting factor is the presence of prairie-dog 'towns' in the midst of which this ferret lives, for it seems to depend chiefly on these little animals for food and no doubt is an important element in their natural control. It is a predator that should be encouraged by ranchmen and agriculturalists who would reduce the numbers of prairie dogs and on whose behalf in recent years large sums have been spent in this endeavor. Probably, however, the elimination of these rodents will mean extirpation of the ferrets, too, for these animals seem to be rare and very likely will need some encouragement if they are long to survive. The most practicable scheme might be to allow both prairie dogs and weasels to live unmolested in colonies on national reserves.

While most of the weasel family are likely to become rarer, since they include some of our best fur bearers, there is one member that is probably already gone. This is the giant mink (*M. macrodon*) that formerly occurred

in numbers on the coast of Maine. Its remains, especially lower jaws, are fairly abundant in the Indian shell-heaps along the shores of Penobscot Bay and Mt. Desert. These remains indicate an animal considerably larger than the mink now living on these shores. It is believed to be the same animal known to the fur buyers of a past generation as the 'sea mink,' and was said to have a more reddish color, rather coarser fur, and an entirely different odor from the small inland mink. At the present time it seems to have been exterminated without a single skin positively known to exist, while instead we now have the eastern mink (*M. vison mink*), which has spread northward to take its place.

The most spectacular return of an American mammal that came to the very brink of extirpation is the famous sea otter (*Enhydra lutris*) of the west coast. These beautiful fur bearers formerly abounded on the coasts of Alaska and about the islands of the Bering Sea, southward in the cooler currents to southern California. Their hind feet are modified to form almost fur-seal flippers for swimming, and their habits are almost exclusively aquatic. On account of the excellent quality and the beauty of its fur, the sea otter was relentlessly pursued. At the time of the Alaska purchase, the Russians were taking some 400 or 500 skins yearly from about the Aleutian Islands and south of the Alaskan peninsula, with perhaps 150 more from the coast as far as Sitka. In the season of 1873, however, as an example of the intensified slaughter, our traders secured some 4000. The food of the sea otter is mostly shell-fish and sea-urchins and the animals abounded around the great kelp beds growing in the shallows about Alaskan islands. Here and elsewhere they were shot, clubbed and netted all the year round. Between 1881



Photo by Paul J. Fair  
**THE KAIBAB SQUIRREL MIGHT EASILY BECOME SHOT OUT.** *Although protected, its survival also depends on the yellow pine, the twigs of which are its staple source of food.*

## OUR RARER MAMMALS

and 1890 over 47,000 were killed. By 1900, the Alaska Commercial Company, which practically controlled the Alaskan fur production, was able to secure only 127 skins, and ten years later the entire annual catch of sixteen schooners was 31 skins. Even at the fabulous price of \$1000 a skin there was no longer a profit in this undertaking. Fortunately, in 1910, the United States Government stepped in and prohibited the taking of sea otters by its citizens, a protection which was extended by treaties with other interested nations. Now, after thirty years of protection, the Russians report that in the Commander Islands there is building up a 'herd' that in 1935 was estimated as between 600 and 700 animals; they are slowly increasing in their ancient haunts among the Alaskan islands and in 1938 a group of about 100 sea otters appeared off the California coast near Monterey. Already a few pelts are allowed to be taken annually on the Asiatic side. The killer whale is believed to be about the only natural enemy, but some poaching is said to occur.

Of the various seals of our coastal waters, special interest centers in the Alaskan fur seals which, like the sea otter, were brought to a very low point late in the nineteenth century, but now, through careful government supervision and international treaties protecting them while they are absent from their breeding grounds, have once more been built up to a population allowing a paying surplus to be marketed. The Atlantic walrus, however, which formerly reached Massachusetts Bay and in colonial times bred on Sable Island, Nova Scotia, has gradually withdrawn from its former haunts and is now rare even on the Labrador coast. Full protection should be given it except where it may be necessary as food supply for the Eskimos; very likely, too, more

careful consideration of the status of the harp and hooded seals, which form the basis of the Newfoundland seal fishery, should now be given, lest, before it is realized, their numbers may seriously decline.

Perhaps the rarest and least known of our seals is the strikingly marked ribbon seal (*Histiophoca fasciata*), which is confined mainly to the arctic waters of Bering Sea and adjacent coasts. It gets its name from the broad yellowish white, sharply defined bands that give its otherwise dark body the appearance of being wound about with a bandage. It is rarely seen among the Aleutian Islands, but, on the Asiatic side, ranges to the Kurile Islands and the Okhotsk Sea. Museum specimens are far and few, but formerly at least its skin was used by Eskimos and fur traders for clothes-bags! Whether it is possible to afford this seal much protection or whether its numbers can be increased remain to be learned.

At the opposite end of the continent the West Indian seal (*Monachus tropicalis*) is becoming rare. Most seals are species of cold water, but this genus is remarkable for being a warm-water type. What is probably the first mention of it is found in Columbus' account of his second voyage, when, in August, 1494, he anchored off southern Hispaniola and several seamen going ashore killed "eight sea wolves which were sleeping on the sands." In the eighteenth century, it was persistently slaughtered for its oil, and gradually became reduced to very small numbers in the Antilles and Gulf of Mexico. Today, it is very rarely seen in these waters, although a few perhaps still visit the almost inaccessible Triangle Keys off Yucatan. If occasional Mexican fishermen who visit the keys could be prevented from killing them, their numbers might in time be increased.

Fishermen are prone to suppose, when

the supply gives out, that the fish have simply gone elsewhere, for are there not "as many good fish in the sea as ever came out of it"? Yet even the wide sea may become exhausted, as whalers long ago found out. While relentless pursuit over three or four centuries has now greatly depleted the supply, only one, the arctic bowhead, has seemed latterly in actual danger of extermination. This whale was peculiar in its distribution on account of being strictly confined to the colder waters of the northern hemisphere. It attained a length of some sixty feet, of which the enormous head accounted for about a third. The narrow upper jaw was strongly arched to accommodate the long plates of baleen, the frayed edges of which form a matted mass for straining out the small pelagic crustaceans and pteropods on which it fed. The length and quality of the baleen, the thickness of its blubber and the relative ease with which it could be captured, long made it the object of a profitable fishery. In earlier times it came about as far south in winter as the Gulf of St. Lawrence on this side, and in spring and summer followed north along the edge of the pack ice. Intensive pursuit began with the voyage of Thomas Edge to Spitsbergen in 1611, although previously the Basques had fished for it in lower latitudes. There were apparently three main groups or populations of this whale: (1) one inhabiting the seas between East Greenland and Spitsbergen (where at first they were especially abundant); (2) a second centering in Davis Strait and Baffin Bay; and (3) a third inhabiting the North Pacific and northward in the Arctic Ocean as far at least as Point Barrow and passing south in winter to Bering Sea and the Okhotsk Sea. The decline of this fishery, which occupied Dutch and British whalers for nearly three centuries, has been sketched by Sir

S. F. Harmer. He shows that the group in the Spitsbergen seas was practically exterminated by the early eighteenth century; the group in Baffin Bay fell off sharply after 1840 and by the early 1900's was practically gone.

Finally, the third group, which had been increasingly fished since 1848, began definitely to decline after 1893 and its pursuit was practically abandoned as unprofitable after about 1912. By that time the species had been reduced to such a low level that many vessels came home entirely unsuccessful. Now, after a lapse of about a quarter of a century, there is encouraging evidence that this group is once more slowly building up, and at present a few are taken each year by the Eskimos, for whom the species forms a valuable source of food and other material. The two other groups may eventually show signs of recovery but proof is as yet meager that the stock is sufficient. The Norwegians, in whose hands most of the large-scale whaling has in recent years rested, ceased to pursue the bowhead and right whales in 1929, and by international treaty of 1937, they and other nations chiefly interested, agreed to give them respite for an indefinite period. It is hoped that in time this slow-breeding species will once more populate the arctic waters and become, as formerly, a staple source of existence for the Eskimo.

Of the many rodents native to North America, very few species have been so reduced by man that they may be regarded as rare and so deserving a measure of protection. In some of our eastern states, however, the fox squirrel (*Sciurus niger*) has been greatly depleted within the last century. There is evidence that at one time it reached extreme southwestern New England. It is probably gone from New York State and has been extinct in New Jersey since the late '90's. This might

## OUR RARER MAMMALS



Photo by Fish and Wildlife Service

**ONLY A FEW DWARF ELK SURVIVE.** *Many of the larger hoofed mammals have been dangerously reduced and can be maintained only on reservations set aside for them.*

be due to overhunting, and to the removal of primeval stands of mature hardwood forests which offered abundance of food as well as many hollow limbs or trunks for safe retreat. It is a species that forages much on the ground and when hunted with dogs will make off over the ground until finally treed, when the hunter may easily shoot it.

One of the local races with circumscribed distribution is Bryant's fox squirrel (*S. n. bryanti*) of a uniform gray color above, lacking the black cap of *niger*, and white below. It is confined to the large peninsula of Dorchester County, Maryland, where its limited population is practically isolated. Local gunners might take a few each season, but with the inevitable encroachment of human settlement and clearing, it seems in some danger of being extirpated through hunting and destruction of its habitat.

Another strikingly colored species of limited range is the handsome Kaibab squirrel (*S. kaibabensis*). This

is as large as a big gray squirrel, but has long ear tufts, a somewhat reddish back, black feet, and a large pure-white tail. It is restricted to an area about forty miles long and twenty miles wide on the high Kaibab plateau on the north rim of the Grand Canyon. Here it inhabits the yellow pine, on the twigs of which it subsists, peeling off the outer bark to reach the cambium layer. Owing to its striking and conspicuous coloration, this fine squirrel might easily become shot out but fortunately is now given complete legal protection, so that its numbers are at present much increased over those of some years ago. At the same time it should be remembered that its welfare depends also on that of the yellow pine, so that any impairment of the stands of this tree would endanger the squirrels as well.

An even better example of a small rodent closely associated with a particular species of plant is the pretty little red tree mouse (*Phenacomys longi-*

*caudus*) which is confined to a limited area of the humid coast belt of California and Oregon. Before its peculiar habits were known, it was regarded as one of the rarest American rodents. In his detailed account of the species (in 1926), however, A. B. Howell has shown that it is not uncommon in forests of Douglas and grand firs, building nests usually out on a branch some ten to thirty feet from the ground. In these nests the young, two or three to a litter, are born at apparently any season of the year. This number is remarkably small for a species of the meadow-mouse type, to which they are related. Food consists solely of the fleshy part of the needles and bark from the tenderest twigs of the fir trees in which they live, and in captivity they will refuse all other usual foods and starve to death in the midst of plenty unless the fir twigs are supplied. The few facts at hand seem to show that the "adult males normally live in terrestrial holes or under rubbish at the bases of the food trees and probably construct small, temporary, arboreal nests only when they have found females that are ready for their attention" (A. B. Howell). It is a further remarkable fact that a second species (*P. silvicola*), of apparently similar habits, has been found in Oregon, but only four specimens are known (in 1926), the first of which was found lying dead on a log in virgin forest. All the other known species of this genus, of which there are three or four with additional races extending across northern North America from British Columbia to Labrador, are ground-living with short tails, and brown fur, hardly distinguishable from meadow mice except by an inspection of their characteristic teeth.

With progress of settlement, many of the larger hoofed mammals have inevitably become reduced to the danger point, and can be maintained only on

proper reservations. One need only recall the case of the bison, with a former range once extending to western New York and Pennsylvania, and the wapiti, in earlier days ranging to western Vermont, Maryland and northern Alabama. An interesting smaller race of this latter is the so-called dwarf elk (*Cervus canadensis nannodes*), of which only a few individuals survive under careful protection in the Button-willows region of southern California.

The bighorn or mountain sheep is again a species threatened with extermination from overhunting and in some places from introduced diseases, especially on the margins of its range. Today, though, a good stock survives in some of the western national parks. Of several recognized races, the most eastern (*Ovis canadensis auduboni*) is probably now quite gone. A century ago it was abundant in the broken country and neighboring plains of the upper Missouri and in western North Dakota.

We have now come to recognize that all the elements of a fauna and flora are parts of a social complex in which undue disturbance of any one element may seriously affect the others. Human efforts at improvement, therefore, should be undertaken only after careful consideration of the consequences. The larger conspicuous species are especially susceptible to changes. Dr. Shelford, the well-known ecologist, recently asks if the winter feeding and regulated breeding of such plains mammals as our bison, antelope or elk, now on reserves, do not constitute domestication. For with overgrazing of the reserves, such supervision becomes necessary. What is the size of an area necessary to obviate this artificial state and make its population self reliant? He concludes that an ideal area, where such animals and their associates might be self maintaining, would be about a million acres!

## Crousty

### THE STORY OF A REDBIRD

By George Miksch Sutton

#### PART I

CROUSTY was a female Redbird or Eastern Cardinal. She and her sister, Second Place, were among the most entertaining pets I ever had.

The birds had been my charges for several months before they received these names. They would never have been named at all had it not suddenly devolved upon me to write an article about them. Knowing that nobody but the animal psychologists would want to read about Female Redbird No. 1 and Female Redbird No. 2, or Redbird A and Redbird B; detesting such infantile names as Tootsie and Wootsie; and hardly feeling Ojibway enough for such euphonyms as *Gray One with Fire in Her Crest* or *Gray One Who Sticks out Her Tongue*, I hit upon Crousty and Second Place as names that were short, completely descriptive, and original.

The word *crousty* is an adjective, used colloquially in the eastern American Arctics, meaning surly or ill-tempered. I have heard it applied to pugnacious sledge dogs. The *ou* is pronounced as in *out*. So do not call Crousty *Croosty*.

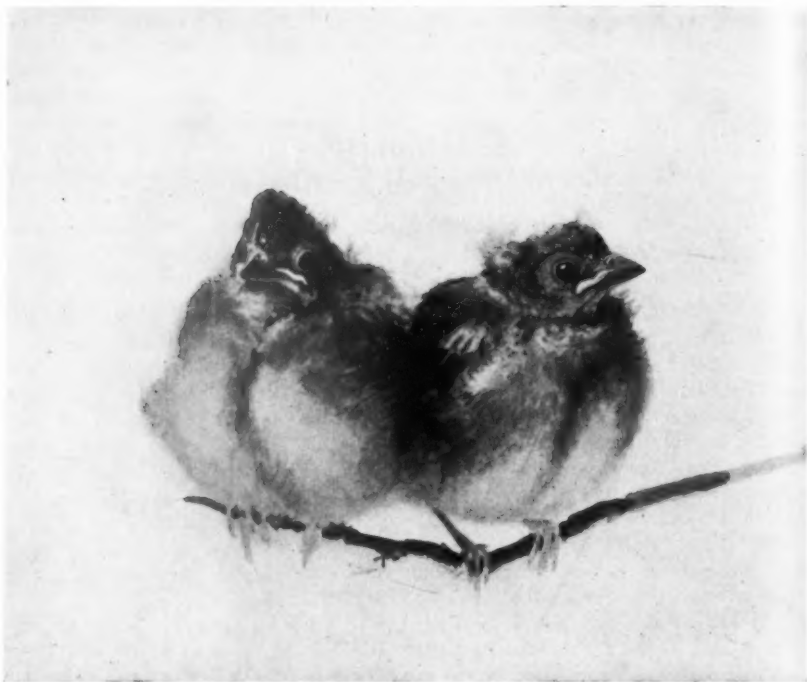
\* \* \*

It is hard to say when Crousty and Second Place began. One might say that they started out as callow nestlings—shapeless, down-covered things with huge mouths in a nest near a lake in southern Michigan. One might say that they began as eggs—white eggs, speckled and flecked with gray and

lilac and brown. But what of the two golden globules that had developed inside the body of their trim, bright-eyed mother? And what of the minute spermatozoa that had lived in their gorgeous father? No, Crousty and Second Place began a long time ago, back in the frontier days of the great Finch tribe; back in the days of *Archæopteryx*, the first bird; back in the era of dinosaurs and pterodactyls; farther back than that.

It is not so hard to describe Crousty and Second Place as I first saw them. Three or four days out of the egg they were lying, more or less in a heap, at the bottom of a thin-walled nest made of weed-stalks, rootlets and leaves. With them, in fact to a considerable extent under them, was a third nestling, their brother. So young were these three that they did not sit, nor stand, nor perch, nor lie anywhere. They merely *were*, side by side, or head by head, or head by belly, squirming now and then, yawning now and then, the pink of their bodies showing plainly through the thin, mouse-gray down. The trio were so much alike that it was impossible to tell them apart, save that one was a trifle smaller than the other two.

That was on August 6, 1936. It will have to be set down, since this is to be so complete a record, that on that date Crousty and Second Place and their brother didn't know much. They had no idea that their nest was six feet from



From a water color by George M. Sutton

**INDIVIDUALLY THEY WERE HOMELY.** *The faces of the two young Redbirds had the expression of an unresponsive bulldog, and there was a considerable bare space about their eyes.*

the ground in a sassafras sapling. They had no idea that tamaracks and alders and swamp maples shaded them from the sun. Least of all did they know anything about their being baby Redbirds. They knew only that a certain incisive *chip!* which they frequently heard, was a comfortable, reassuring, right sort of sound. That a certain fluttering was a signal that a meal was on its way. That a sudden slight shaking meant that all of them must get up, beat their stubs of wings, lift their heads as high as possible, open their mouths wide, and buzz for food.

I am not exaggerating when I repeat that the three- or four-day-old Redbird brood didn't know much. They knew so little that they set up a fervent buzzing the instant I touched their nest

with my finger. Nor did they cease from this clamor so long as I made a commotion near-by. Instinct with life, knowing no enemy but hunger, they knew only that they must keep this enemy off with the only weapon they possessed: their cry for food!

By August 8, Crousty and Second Place and their small brother had developed considerably. Pinfeathers now showed through the down. Their beaks had darkened to a dull gray-green. Nor were they a mere scramble of heads and bodies and legs and wings in the bottom of the nest. They were three quite presentable young birds, lying side by side, their heads pointing outward.

A couple days later, at 9 o'clock, they surprised me, they had grown up so.

## CRousty. THE STORY OF A REDBIRD

Their body plumage was dull, woody brown. The broad wing feathers that hid most of their bodies were definitely, if quietly, red. Only a few wisps of down clung to the slender blood-quills on their heads. Their bills, which were big and clumsy, seemed to have turned into Redbird bills overnight. Only their tails—those ridiculous stubs where tails so obviously ought to be—still proclaimed babyhood, justifying this unseemly clinging to a bulging, toppling nest.

Thankful that the brood was safe, and feeling that no harm could befall the birds while I was near, I hid in a clump of elderberry a few yards away. Soon there was a sharp call-note, a flash as of rosy fire, and a loud flutter of wings. Instantly the young ones set up a loud buzzing. I could see their heads, wobbling above the nest, reaching up toward the big, coral-orange beak that they trusted so implicitly. The father was deliberate, for all this noisy begging, poking bits of crane fly and cave cricket and measuring worm down into the Three Great Mouths. When all that he had brought was gone, he gazed at the nest, gave one of his progeny a gentle peck, watched it adjust a wing in response, and flew off.

The mother returned from her foraging a moment or so later. But, spying me, she uttered a sharp cry and refused to fly to the nest. Her mate reappeared and, seeing my face almost directly underneath him, sounded a vigorous alarm. Soon the shrubbery and weeds were alive with Song Sparrows, Robins, Scarlet Tanagers, Yellow-throats, a pair of Indigo Buntings, even a somewhat nonplussed Downy Woodpecker. All these vigilantes of the swamp-edge scolded me roundly.

Crouching in the thicker, I pondered on those baby Redbirds. Should I take them at once, or wait a day or two? To take the brood was to enter,

that very instant, upon a new life—a life of weighing, measuring, and above all feeding three delicate, rapidly growing organisms. That the fledglings were not yet able to fly was obvious. That their parents would care for them far better than I during the next day or so also was obvious. But suppose I left them! Suppose I waited! Who could say at what moment the parents would lead their charges quietly off through the woods?

Long had I wanted to ascertain exactly how a young male Redbird molts into his first winter's brilliant plumage. Here was my chance at last. One of these awkward bantlings must surely be a male—one at least, perhaps more than one. But which one? The three birds, it must be remembered, looked almost exactly alike.

Thus it becomes plain that I got Crousty and Second Place somewhat by accident. Not because I wanted two pretty pets. Not because I loved Redbirds, but because, it being impossible to distinguish nestling male from nestling female Redbirds without dissection, I was obliged to take the whole brood on the chance of getting a male.

\* \* \*

The brood fared well under new management on August 10. I took them from their swamp-edge home without removing them from their nest, placing nest and all in a wire-covered box in my laboratory at the Edwin S. George Wild Life Reserve.

Together, the three birds were a pretty sight, for they fitted into their nest in such a way as to present a tidy and well-feathered appearance. Individually, on the other hand, they were homely. Their faces had the expression of an unresponsive, even bad-natured, bulldog. A considerable space about their eyes was bare. The middle of their bellies was bare. So

effectively did a lifting of their wings reveal their essential nakedness that when they stretched or yawned they looked as if they had been partly skinned. The pinfeathers were long and slender. Those on top of the head were twice as long as the others, though only the tips had broken from the sheaths. These long pinfeathers would one day be crests!

The birds ate grasshoppers, which I caught in the garden or along the edges of fields. We shall not dwell upon the subject of grasshopper catching, for to do so would burlesque for the reader a very serious business just as surely as it would evoke painful memories for me. We may say, in dismissing the matter, that a group of boys came to the rescue. Devoting part of each day to sweeping the fields with nets, the ten or twelve lads laid at my doorstep boxes, cans, and jars full of the tobacco-spitting insects. These, in due season, were transmuted into Redbird. From August 10 to about August 25, grasshoppers haunted my dreams. To this day I cannot look at a baby Redbird, nor listen to a baby Redbird's buzzing, without seeing grasshoppers as big as cows.

Feeding the birds wasn't always easy. Sometimes they refused grasshoppers. At such times I gave them hard-boiled egg yolk, bread soaked in milk, or angle worms. After swallowing their food they licked their chops, flicking their translucent, sagittate tongues out at one side, then out at the other, in a curiously reptilian manner. At licking her chops, Second Place was from the very first more thoroughgoing and more deliberate than Crousty.

On August 11, I put numbered aluminum bands on the legs of my pets so that I would be able to distinguish them with certainty. That day Crousty weighed 25 grams, Second Place 22.2 grams, the third nestling

20.1 grams. All three had gained weight, though they had made no attempt to leave the nest. The behavior of the smallest one alarmed me. Its appetite was poor. Too much of the time it kept its eyes closed.

August 12 was an awful day. Not one of the birds ate properly. Crousty was the most vivacious of the three, but she lost weight with the others. To my consternation I found that the nest was crawling with mites. Burning nest and old box immediately, I found a new box, lined it with clean, dry cloths, and set about feeding the birds the most tempting morsels I could find. Finally, with tiny grasshoppers dipped in water, I revived the two larger birds. But the smallest one grew steadily weaker, too weak at last to beg for food, and died. Not knowing it at the moment, I had lost the only male of the brood.

At ten o'clock on the morning of August 13, Crousty shook herself, stood high on her scrawny legs, lifted her crest Indian-chief style, looked about with eyes wide open, and hopped from her cloth nest. She did not return. Instead, she found a comfortable perch in the box, settled herself, and preened her wings. Not that she gave up begging for grasshoppers. Oh, anything but that! Nor was she yet able to fly. The stubs of her tail feathers were so short that I did not even attempt to measure them. But there was something indefinitely mature about her posture and manner. As she ran her bill through her half-developed wing feathers, flakes of dry sheath fell in a shower. As she stretched her leg and wing far back of her (a way birds have), a hint of rose-pink showed at the side of her chest. And somehow (who can say how?) she had all at once learned the clear, incisive, slightly metallic *chip!* of alarm that her mother and father had used at the swamp-edge.

## CROUSTY. THE STORY OF A REDBIRD



From a water color by George M. Sutton

**NESTLING REDBIRDS LOOK ALIKE.** *Hoping to secure a male, the author took three fledglings for his studies of the male Cardinal's first winter molt.*

When Second Place heard Crousty's *chip* she stood up, lifted her ludicrous crest and looked wildly about her, as if trying to decide which way to fly. That *chip* was a cry of warning. That *chip* meant *Danger! Go! Go for your life!* But Second Place did not fly. She started to leap. She even spread her wings. But the wild gleam went from her eye. The pinfeathers of her crest went down. Sinking to her belly, she nestled in the warm cloth, wriggled comfortably, puffed out her feathers and closed her eyes. Thus may the instinct of self preservation give way to the Sybarite in a young Redbird's soul!

On August 14, Second Place left the nest. The two birds now spent what time they had between meals in preen-

ing themselves, scratching their ears with their feet, and dozing. Occasionally they had a fit of restlessness during which they set up a loud chirping, stood high and slim, and looked anxiously about the room. Crousty, in particular, was determined to get away from the box at such times, to the back of a chair, to the scales or an ink bottle, to the top of the bookcase. Looking intently at one of these far-away places, she would hop along the side of the nest-box, craning her neck, bending over slightly, sometimes (in her preoccupied way) actually hopping onto or over poor Second Place as if the less active bird were only part of the box. And Second Place, instead of giving her sister a drubbing for this rude-

ness, would crouch, make herself slim and small, or hop out of Crousty's way.

By August 15, both Crousty and Second Place were flying. They did not fly well. Having no tails, they could not steer themselves. With a look of rapture in their eyes, a raising of their crests, and a loud *chip!* they would leap into the air, to flutter straight across the room, bumping into anything that happened to be in their path. They had not the slightest knowledge of making a landing. Crashing into the bookcase they would thud to the floor. Banging into the wall they would scratch and fumble at the paper, scratching and fumbling all the way down to the mopboard. They very nearly knocked themselves unconscious flying into window panes. After one such accident Second Place did not stand properly for days.

\* \* \*

With much satisfaction I watched my Redbirds grow. Slowly the bare spaces about their eyes disappeared, fawn-colored plumage spread across their chests, and deep maroon showed in their jaunty top-knots. Day by day their wings grew stronger, their axillary feathers more gloriously pink, their tails more serviceable as rudders and balances.

Measuring them, as I so frequently did, I came to know their individual mannerisms. Second Place had a way, which Crousty never had, of looking thoughtful while she licked her chops. Second Place's wriggling (while being measured and weighed) was that of one who backs out of a predicament, while Crousty's was rash, heedless of consequence, obstinate. Not that Crousty was exactly stronger or healthier. Both birds ate well, flew well, slept well. But Crousty rushed forward, experimented, inaugurated expeditions to new parts of the house, dominated;

while Second Place was content to aid and abet, to follow, to let Crousty do the leading.

I began to think that Crousty was a male, Second Place a female. But when, during the last week of August, the frayed, dull nestling plumage began to drop out and sleek new feathers to come in, I knew that my pets were both females, that my study of a male Redbird's first winter plumage was not to be made that season.

I saved Crousty's and Second Place's nestling feathers for study and comparison. Not all of them, of course, for the birds molted, even as they performed certain other physiological functions, more or less everywhere. Which leads me to say that the rate at which my two birds digested their food fairly awed me. Feeding each bird six middle-sized grasshoppers, one quickly after another, I observed the last external traces of peristalsis disappear from the region of the throat and chest. Now, thought I, what is going on *now*? A second, two seconds, three seconds have passed. Are those six grasshoppers still grasshoppers, or are they by this time only a mass of chitinous particles and thin strands of arthropod muscle, mixed with 'tobacco juice' and pepsin and rennin? Is one grasshopper still ahead of the other five? Is the last grasshopper still a separate entity, or is it mixed up with the rest? Has the first grasshopper passed the pylorus? Is it drifting down the duodenum? With what fearsome rapidity, thought I, gazing at those two grasshopper-consuming monsters before me, must the Christian converts of old have been converted anew into lion!

Whereupon I would leave off being mawkish, focus my attention upon the abdomens of my pets, and observe the slow lifting and sinking of the plumage. It was an odd movement, that movement of the gizzard that



Photo by J. Van Tyne

**CROUSTY WAS THE MORE DOMINATING.** *Of the two female Redbirds, Second Place was content to aid and abet and let the more adventuresome Crousty do the leading.*

showed *even outside the bird*—a movement up and down and from one side to the other between the legs, like the struggling of a tiny, strong hand to crush something with tightly clenched fingers.

The sisters began to eat by themselves when they were about three weeks old. In their new cage they had a dish of mashed potato mixed with chopped-up grasshopper and hard-boiled egg, another dish containing small fruits and some lettuce leaves. They were fond of grass-blades, buttons, pebbles and twigs, too. Not that they swallowed these, but they liked to run them through their bills, crushing or cracking them, tearing them to bits. Their beaks were large and strong by this time, with touches of bright red-orange at the base of the lower mandible and near the nostrils.

Crousty and Second Place were tame. They knew no fear of human beings. Whatever we gave them—anything

from a sunflower seed to a mouse-trap or an old glove—they took with their beaks. And whatever they grasped with their fearsome mandibles they bit and gnawed and gouged at until we took it away. It is thus that young members of the Grosbeak tribe become the *Kirschkernebeisser*, the Cherry Pit Biters, that they veritably are.



The Redbird sisters led a life of ease. The last of August they motored with me to West Virginia. Here their cage was placed on a screened porch that was shaded with grape vines, exactly the sort of place a Redbird loves. The warm, quiet days were perfect save for a young Chipping Sparrow, who shared its cage with them and whose chief divertisement was pulling out Redbirds' feathers!

Crousty and Second Place sometimes joined us in the dining-room after our evening meal. This was partly because

we enjoyed the company of the pretty creatures, but chiefly because the twilight hour was difficult for them. If left in the cage as darkness gathered, they leaped from perch to perch, chirped loudly, and bashed the screening frantically, knocking feathers from their crests, and skin from the base of their bills. In the dining-room they flitted gaily from the mantelpiece to the floor, from the windowsill to Great Aunt Sarah's writing desk, round and round the chandelier, or best of all from head to head of us who sat at table. Something about the top of the human head, the warmth of it, the softness of the hair perhaps, quieted the restless birds. They might perch a moment on one head, then fly to another. They might spar for a favorite position, or change places. But once they alighted upon someone who did not promptly remove them, they usually settled down, puffed out their feathers, lowered their crests, and dozed. Giving the birds this frolic in the house doubtless spoiled them. But I was not interested in Redbird character. I was interested in Redbird plumage.

We all talked baby-talk when addressing the Redbirds. Why grown persons should find it so necessary to revert to infancy when addressing a pet is beyond me. But Crousty and Second Place tolerated our silliness. Listening, they turned their heads coyly to one side, watching our teeth and mouths.

One morning in mid-September we let them fly about the kitchen while their porch was being cleaned. Alas, a screenless window was open and out they flew. "Where are the Redbirds?" someone called. I hurried out, listened closely, and heard them chirping in a big elm close by.

Knowing that they would recognize my voice, I approached the tree with sunflower seeds in my hand, saying clearly: "So that's where they were!

How were they this morning? Did they think they wanted to get away from me? Didn't they even know who this was talking to them?"

How was I to know that our next-door neighbor was tending his garden just back of the big forsythia bush, only a rod or so the other side of the elm tree? Poor man, he thought I was speaking to him. He straightened abruptly, then, steadying himself, gazed at me as if trying to decide whether to run for his life or come at me with his hoe!

We almost lost the birds that day. They were not hungry. They found the leafiness and airiness of the elm tree thrilling. I talked baby-talk until I was hoarse and looked upward until my neck ached, but they would not come down. Bringing a ladder, I climbed the tree. The birds hopped closer when they heard my voice, but not close enough. When I started out the long, drooping boughs in direct pursuit, the unfamiliar sounds and violent shaking filled them with terror. Crousty now flew to a tree in a distant part of the yard. Second Place flew toward the house, circled dubiously, and settled on the roof. I descended from the tree, put the ladder against the house and, cooing and coaxing the more inanely the higher I went, finally captured the bewildered bird.

As for Crousty—she had by this time become acquainted with a wild Redbird, a full-grown male, who was doing his best to lure her to the ragweed and willow jungle down by the creek. She almost went with him. She called to him, answered him every time he chirped, even made two or three short flights with him. But my entreaties confused her. When, in desperation, I hurled a green apple at the wild bird, Crousty flew out, fluttered above me in jerky circles, and came to rest on my head.

## Accent on May

By Mary F. W. Lewis

**D**O YOU ever wake up in the morning and hear, not just a lot of birds making a racket, but a bubbling exuberance of singing and trilling that brings you an inner leap of delight?

Do you ever feel a great rhythm of life, perhaps in some lonely October hour when a return of summer heat marks by paradox the cooling year? Or watch clear winter sunlight on stripped sycamore limbs? Or the sparkling river freed at last from its broken jangle of ice?

Such moments are important. They are a hold on reality and help to keep us balanced in a world full of fantastic distortions. They make us one with nature, which precedes and outlasts us and our troubled times. Even so small a thing as the song of a Wood Thrush suggests events of enduring significance—more enduring even than war.

And here is an unscientific record of one person's response to spring and birds and May, which you, in your valley, along your stream or among your meadows may duplicate with as many lovely variations as there are adventurers among you.

Unsung, unheralded, domestic but beautiful, my creek flows beneath the turning seasons through an old Pennsylvania valley. Like yours, perhaps, it appears at the start commonplace and insignificant, contending with humble neighborhoods and railroad cuts. But at the bottom of a mound of winter-killed reeds, bright water bubbles irresistibly clear. Water cress, even on a February day, is irrepressibly green,

and here, at this unpromising source is the loveliness of purity and the ever-astonishing resourcefulness of nature.

Fed by draining marshes where cat-tails and milkweed grow; swelled by recurring springs along the way, the stream gains importance and acquires a name. It bubbles conversationally at the base of round boulders, slows up in a pond, and trickles as if afraid to fall so far over the dam on tumbled rocks below. Thence down through narrowing hills edged by trim lawns and terraced gardens, the wild brook drops over a slanting ledge of igneous rock to merge with the slow, sedate, and age-old Wissahickon Creek.

In the upper valley among the lawns along its sunny slopes I've spent my life, of late years nearer to the brook than any dwelling place because of a cabin. I've watched the seasons swing from ripe corn on sloping fields to snow-covered undulating furrows. Outside my cabin windows I've seen hen Pheasants teeter clumsily on my small feeding station; heard the Snow-birds tinkle; and once, within a distance of six feet, I witnessed a Cooper's Hawk at its prey.

For me, birds are the fullest measure of spring's approach—first by their beauty in form and voice, the less lovely ones no less interesting if esthetically unfulfilling; second, by their skill, independence, and mystery.

You don't have to become an ornithologist to love birds. Most of us remain amateurs, trapped by their esthetic appeal. Some of us find a

recurring assurance of godliness in even so simple and so delicate a thread of sound as the White-throat's song.

I made this remark one night to an Englishman who asked me if I'd ever heard a Nightingale. I shook my head and asked if it were really so beautiful. He replied: "Well, it's like this. Get up early, before dawn. Go to the place where he sings. Listen and be charmed. But you're slightly disappointed." I made an inward note that, alas, even the Nightingale, like so many heralded perfections, falls short.

"However," he went on, "if you'll go out at midnight to that clearing and listen to his tuning up, by the time he reaches his full song at dawn you'll know you never listened to anything more beautiful in your life. And you'll boast about having heard a Nightingale for years to come!"

So it is with all birds. To appreciate the May crescendo you must know February and March, and the heart-breaking wind-blown days of April when you go out to listen for Phoebe and hear only Crows. There are snow flurries, too, and afternoons of cold rain which make birds songless and invisible under the shelter of matted honeysuckle.

But rain-sodden earth in February will not fail you! Come outside and see! You've been walking all winter on floors of cement and concrete. You've been living all winter inside walls of steel and glass and book-lined rooms. Your thoughts have bred upon thoughts, not upon life direct. And a rainy day, you think, is just one more to spend with books.

Not so! Come outside and see how water romps hilariously through furrows and slides down bluffs to join the swelling creek! See how it races down tall reeds and brown, discouraged grass. Water pounds at February, like your spirit, driving away snow patterns,

clearing out brush and hollows, while birds sit by or creep under tangled vines and, sheltered from flood and rain, wait, assured of spring.

You've watched the White-throats all winter at your feeding station; boasted about your half a dozen Red-birds, and at dinner tables have broken off irrelevantly from political talk to tell of the cock Pheasant you saw that afternoon, foolishly advertising his exact position by his rusty-hinge squawk as he picked his cautious, snooping, gorgeously beautiful way over a lawn behind your cabin.

To list them so on paper—Titmice and upside-down Chickadees; Downy Woodpeckers and White-breasted Nuthatches peering at you from the crotch of limb and trunk; and Song Sparrows and Juncos busily eating at your feeding stations—to list them so, makes February sound active with little to complain about.

But these are little episodes with seemingly endless waits between. You really long for May woods filtered with sunlight, for the unexpected Warbler, for the unidentified Vireo. February is a period of breath-holding, of being grateful for small blessings; of scanning the sky for the first Blackbirds; of sharpening the ear for the first migrant Robin. And there is March to go, and April, too!

The trick is to stop longing for May and to discover what lies near at hand. Take a March morning with a light snow on the ground. You go down to the cabin along your stream and, after a suitable period after your arrival, the dry chipping of Redbirds draws you to the window. Titmice swoop from feeding box to maple bough; Juncos, White-throats and Song Sparrows pick up millet from the ground. Then the nearest forsythia tangle begins to shake and out comes a magnificent red-striped Fox Sparrow! Even the sturdy White-



Photo by Mallett Kimball

**ROLLICKING SONG AND ARRESTING PLUMAGE.** *Widely distributed, the Yellow-throat is one of the first Warblers that everyone learns—and likes at once.*



Photo by T. S. Pettit

**OVEN-BIRDS CALL LOUDLY FOR HOURS ON END.** *Amid the glorious jumble of bird sounds in May, the high-pitched voice of this nervous Warbler adds to the excitement.*

throats make way for him. He's a rich ox-blood color, even to his tail.

You leave the cabin and trail a Field Sparrow through tangled wild rose growing over a heap of stones in an upper field. You *must* find more Fox Sparrows! You *must* hear them sing before they go father north! The light snow covers swelling maple buds and weighs down in extravagant arching gestures the budding shrubs. Along one edge of the field is a tangle of forgotten forsythia and in it a flock of Song Sparrows fluttering under snow arches.

You lean against the wet satin of a wild cherry and the sun reels out from a windy sky. Somewhere, high up, a Robin talks. Farther off a Redbird, like a drop of life-blood against a giddy

patch of blue, tests out the morning. And the Song Sparrows begin an intimate, delicate chorus. Not one breaks into real song. It is all too impromptu, too experimental, too fleeting, to deserve the term composition. But it is perfection.

The voices stop. The sun recedes behind closing clouds. Discouraged, Robin and Redbird go elsewhere. All is silent and you continue prowling along the hedgerows, still on the hunt for Fox Sparrows.

Now there's no wind. The day has changed. A misty rain begins to fall and there they are at last—a crowd of Fox Sparrows in the lower field! They're jumping, digging and tearing at last October's leaves. Through the

## ACCENT ON MAY

magic of binoculars you enter their world. The familiar winter-brown corn field becomes a romantic labyrinth. Dried stalks make a miniature forest. You, too, creep from the honeysuckle jungle that throttles a stand of sumac. You, too, leave the wilderness and scout over the undulating furrow-country, part of a cautious army of occupation.

Something startles us! We rise like a handful of windswept leaves to settle silently in the sumac. In that silence you discover how fanciful you've been, and that you are still waiting. For what? A moment goes by, then another. You have time to think many thoughts, your mind darting away from the clouds of war that engulf you whenever you

give them a chance. Then you're brought back to reality—to the misty afternoon; to the rough texture of the apple tree, and the satisfying brown field. Why are you waiting here?

You recognize the answer when it comes. Inimitably sweet, not too familiar yet confiding, the whole flock of Fox Sparrows sings sweetly in the gentle rain. It's a lovely sound—something assuring, something beautiful, that you know will happen again and again for years to come whether you are there to listen or not.

And now it's April! Pull the last day of March from the calendar! Stand outside very still and listen. Don't breathe! Don't move! Penetrating notes of Mourning Doves give an

**IN APRIL MANY MOURNING DOVES ARE COURTING.** *Their penetrating notes give an illusion of distance—a prelude to the joyous chorus of the month that follows.*

*Photo by Allan D. Cruickshank*





Photo by Ruth and H. D. Wheeler

**WIDE-EYED, SILENT AND SUSPICIOUS.** *Although the Hermit Thrush is one of the New World's finest singers, its enchanting song is seldom heard on migration.*

## ACCENT ON MAY

illusion of distance. Flickers preen themselves vigorously, perpendicular against tree trunks. A hen Pheasant jumps out almost under foot from her night's roosting place. Everywhere, whichever way you turn, eyes and ears are jerked into attention by Chipping Sparrows, by Chewinks, by the dipping flight of Goldfinches. A Tree Sparrow trills. It's beginning—the spring chorus! Overhead a Hawk soars. Thick, chunky, with a barred undertail, he circles and hangs directly overhead. You whip out Peterson's 'Field Guide.' A Broad-wing!

You sit alert in a field and life sweeps around you joyfully. It takes time to temper ears to the selfless purity of bird voices. Robins, hundreds of Robins, carol with an experimental note, forming squares of sound. A Downy Woodpecker works a cherry bole netted with shining stems of poison ivy. One Tree Sparrow sings and sets the whole air shimmering.

If fields and woods ever cease to inspire and soothe you, there is no friendship nor any diversion to take their place. You learn to make the extraordinary out of the commonplace, to adjust your mind to deep levels of simplicity.

Phoebes are settling near the stone bridge under the railroad trestle. Your ear delights in their reiterated song. Down in the ravine, the Hermit Thrush, wide-eyed, silent and suspicious, resents your equally wide-eyed stare. The Chewink, regularly noisy now, endears himself another season with vigorous voice and scrabbings.

It's foolproof—this love of birds! You win both ways. All is gain. April is here and May just over the hill! Nothing can halt this lovely march of time. Nothing can blackout May. It's down in the valley beside the stream. Seeping into your neighbor-

hood! Under your very eaves. In hedges, too, and beneath the lilacs!

Brown Thrashers shout the news! House Wrens tell the world! Down in the deep part of the valley where hills are steep and wooded, Oven-birds call loudly for hours on end. You want to be everywhere at once! The dewy moment shimmers with music. Each hour, each environment has its perfections.

Even the Robin comes into its own. Robins, you think, are too domestic to be interesting. Give them an inch and they take a mile. They'll outfuss, out-carol, and out-shine any other species. Yet—Robins on late afternoon lawns when shadows lengthen; Robins perched singly on the apex of a neighboring roof; and hundreds of Robins before domestic cares have brought out their fussy, committee-woman complex—hundreds of unpaired Robins in wild cherry trees caroling at dawn and at sunset, claim an undeniable place in your affections.

It wouldn't be May without Robins.

It wouldn't be May, either, without the Wood Thrush.

You stand by the lake resenting a feeble memory that forgets in winter the variety of trills and warbles, the lisping, chattering, quivering sounds that form an intricate pattern of beauty around you. The sun, with strong tapering fingers of gold, is prying apart the tree trunks on the eastern hill, and reaching out into the valley and far beyond. You're bathed in grateful warmth. Earth-smells, damp leaves, fresh grass, and something wild and sweet you do not know, storms another battery of emotions. The second of May! You feel a prickle of warmth race up your spine. And the very marrow of that cord responds with a wild rush of gladness at your first-for-this-year sound of the Wood Thrush!

Through March and April, through



Photo by A. Dawes Du Bois

**POISED DELICATELY ON A HIGH BRANCH, the Wood Pewee's nest is finely sculptured and hard to see. The sad, gentle call of this retiring Flycatcher is not easily forgotten.**

## ACCENT ON MAY

the frozen days of February when time seemed to have crystallized, you've fought your way to this moment! Only to realize that May, like a breath, like a song sung once a year, like a passing aroma of earth fresh-turned and sensuous—that May and the song of the Wood Thrush will pass as fleetingly.

But now, in this instant he sings! The Hermit Thrush may sing more delicately, the Brown Thrasher with greater variety. Wrens may have more volubility. The Water-Thrush is rarer, the Oriole gayer. The Chat is unpredictable, the Vireos more continuous. Another may prefer the Veery's sweetness, or the upward spiral of the song of the Olive-backed Thrush.

But the Wood Thrush you can never hear enough. Each song, each sequence every time, turns your heart over with memories that bind together neighborhood and valley, fields and garden, your childhood and the fleeting present.

Stand on the sun-filtered path and listen! He's singing again as if he'd flown all his migratory way especially for you to hear! Above, the Warblers are winging jubilantly north toward their breeding grounds. Only a few, such as Redstart and Yellow-throat and Chat, will settle here. The others go to New England, to Canada, to wild wooded islands and bright blue waters—the Blackburnian and Bay-breasted; the Parula and the Magnolia. But today, all together in a glorious jumble, they sweep overhead in joyful waves of ineffectual and tantalizing sound, clearing young leaves of an overabundance of insects, cleaning and sweeping the trees as they go.

You lose your mind in an ecstasy of excitement, kept to a high pitch by Wood Thrush and Oven-bird, and by the sad, gentle call of a distant Pewee. Highest of all, like a tight ceiling of sound, the Titmice, utterly scornful

now of winter feeding stations, reign in those regions where sunlight curls lovingly around tender leaves.

Now comes the test of your ability to catch instantly in the binocular field that tiny feathered activity agitating a leafy terminal a hundred feet high in a tulip poplar! Now is the time to remember if that distracting *tscoo-tsoo* belongs to a Black-throated Green! Listen to the shouting of the Oven-birds down in the lower valley! There goes the quick flash of radiant orange and black—a Redstart. And behind him, darting expertly through spaces you can't see among leaves is his consort—yellow and brown. What's that? Oh yes! The Blue Jay's metallic but beautiful and less familiar call! Red-eyed Vireos launch their daily, lengthy sermonizing.

And still, over and over, the Wood Thrush is singing his heart out as well as your own, into a sparkling, happy world.

You push down into the lower valley. There's a wild sweetness here. The stream is noisier, and nature more secure. There goes a Hooded Warbler! And there, a Black-throated Blue! Quick! You catch him momentarily in the binocular field, just long enough to be sure. A Black and White moves up a tree trunk, busy and thorough in his devastation of insects lurking in rough bark. Crows, many Crows, cover the same upper levels of sound where the Blue Jays, breaking their brittle notes in two, float them on the air. A Great Crested Flycatcher shouts an alarm. There he is! Sunlight flickers through his reddish tail, strikes his crested head and the clean new yellow of his sides. Darting out and back again to his perch, he seems too big, too dignified for such Flycatcher habits. And deep in the woods, far beyond the extended field of binoculars, the Yellow-billed Cuckoo calls.

*What's that?*

A song you've never heard before! Nothing to recognize in that wild, melodious loveliness! You tense every faculty awaiting its repetition. There it comes! A warbling, full-throated song! The bird must be low, close to the ground, unless, like the Scarlet Tanager, he is a ventriloquist.

You step cautiously, moving around a clump of shadbush for a longer view of the brook. And there is the singer! A brown-backed bird with a striped breast and a marked white line over the eye. White line over the eye? Carolina Wren, Tennessee Warbler, Red-eyed Vireo, and Chipping Sparrow. But it is none of these! Clear, visible without field glasses, and perched on a dead limb jutting out over the stream, his teetering activity leaves no room for doubt. It's a Water-Thrush! Along *your* stream!

You turn the pages of Peterson's 'Guide,' while the bird, still unaware of your enraptured proximity, sings again and again, his lovely song swinging clear above the talkative brook above the shouts of Oven-bird, Jay, Crow, and Great Crested Flycatcher!

Abruptly the song breaks off. You've been seen! He darts away beyond vision or hope of further observation. The line was white above that wary eye. A Northern Water-Thrush. The brook has not missed a beat in its elaborate rhythm but there is a sudden emptiness of sound. The moment which was is no more.

Anti-climax sets in. Sunlight is higher. The idea of breakfast becomes interesting. You know it's best to heed this warning for there are always stops along the homeward way, for perhaps a Cuckoo, or a Flycatcher you're not sure of, or a glimpse of an unusually large flock of Warblers. And always you pause just once more to hear the Wood Thrushes calling,

answering, calling, singing, and reaching into the very heart of everything that's good and beautiful in man's imagination.

Thus May passes, and there's nothing you can do about it. Tender green leaves grow full and darkly luminous. Birds become hard to see. Rank weeds leap up a foot a day, hiding the nests of Chat and Catbird, of Indigo Bunting and Yellow-throat. Tent caterpillars are on the march, and snakes weave devious if harmless trails across the paths. Nettles and poison ivy are powerful antagonists, and pollens burden the air with a blanket of musky odors.

Thus May passes into the fullness of June. Like a sweet morning which—though redolent with fresh-turned earth and dew must climb inevitably to high noon and a humming of bees—spring crosses the shadow-line into drowsy summertime.

On the terminals of full-grown leaves, Warblers lisp their dreamy songs. Heat creeps through damp grass and shimmers in sunlight on hot roads. The earth, progressing on its orbit, which no hand or desire of man can stay, relinquishes its tender season to a warm, full grasp of energy. Life swells and takes new form. Buds open into flowers and hang in auras of almost visible fragrance.

For you is well-earned peace of mind. And although the service to man rendered by melodious friends has just begun; although for birds, the supreme effort at reproduction is being carried on discreetly and secretly behind the trembling leaves, for you the May song is over, the high song is done.

But curiosity goes on forever. As long as birds sing, as long as they flash their mysterious colorful bodies around us, there will be peace on someone's earth, and good will in some men's hearts.

## How Many Birds Are There?

By Roger T. Peterson

SEVERAL years ago, Russell Mason, who was then active in the Florida Audubon Society, asked me how many breeding birds I thought there were in the United States. He had heard that the number was computed to be about 50 birds per person, which would be over 6,500,000,000 birds. I got out pencil and paper and did a little figuring of my own on this tantalizing problem. It was obviously almost impossible to make a really good estimate without much more data—especially population counts of nesting birds in different parts of the country. From my meager experience with breeding-bird counts, I took two pairs of birds per acre as my basic figure. This would mean 2560 breeding birds per square mile. Multiplying this by 2,973,776 square miles in the United States, I arrived at a figure of 7,612,866,560 birds (or nearly 60 birds per person). I now believe this to be too high.

When Mr. Mason asked this question, I had very little data to go on, and the National Audubon Society had not yet started its annual breeding-bird census. The other day the question came up again. This time the estimate was 3,000,000,000 birds. Out of curiosity, I dug out the published breeding-bird censuses of the last four years, and found that they averaged about 5 birds per acre instead of 4, which I had used as my basic figure. I am sure this is not accurate for the country as a whole. Three is probably more nearly right. Census takers, being human, have a tendency to select choice areas instead

of average spots, so we find such very specialized areas as country estates, marshes, etc., which boost the average a great deal. The total acreage of such favored habitats in the United States is relatively small.

Even so, the breeding-bird censuses are very significant, and I believe that after a few more years they will give us a more accurate idea of the numerical strength of American bird life. First we will have to know the acreage of the major habitats in the United States. This should be quite simple. Then, through a sufficient number of censuses of each of these habitats, we can strike an average and then multiply by the acreage. We do have a fairly good picture of some bird populations already, especially those on farms and in the deciduous woodlands of the Northeastern States.

In 1914 Wells Cooke began to conduct a census of farm habitats in many parts of the country, and found that the average farm harbored about two and a quarter birds per acre. He pointed out that with proper land use and development this figure could be greatly raised. As there are nearly a billion acres of such land in the United States (including crop lands, pasture lands and farm woodlands), the farms alone would account for over 2,000,000,000 birds. In his first report, Cooke went on to make the following curious statement. "The only census on a large scale of a true forest comes from Idaho, and this shows one pair of birds to three acres. The heavy timber



Photo by Eliot Porter

*DOWN OR UP? Red-eyed Vireos now throng shade trees and nest in much of the new woodland in the East. Have they decreased or increased since the original forest was cut over?*

of New England, of the mountains of Pennsylvania, of northern Michigan and northern Wisconsin would certainly contain a bird population no more numerous than that shown in Idaho, for it is well known that the heavy forests of the eastern mountains are a region of silence."

The Appalachian Mountains cover tens of thousands of square miles, most of it covered with woodland. I have never thought of this vast area as a "region of silence." After July 10, perhaps, when the small birds stop singing, but certainly not during early June. Every breeding-bird census I have ever taken has been in forest land somewhere in this region. One on a 75-acre tract in western New York ran 4 birds per acre; one on a 30-acre plot in Maine ran 5 birds per acre; and nine woodland blocks in the mountainous part of northern New Jersey averaged over 4 birds per acre. The latter plots were not chosen by me because they

seemed promising for birds, but were selected by state foresters as typical blocks of state forest land.

The Audubon breeding-bird censuses have tried not to duplicate Cooke's work in farming country. They have, thus far, leaned mostly toward woodland habitats. These show an average of about 4 birds per acre in normal ungrazed deciduous woodlands. Coniferous woodlands average about the same, or a little better. Those in northern New England run closer to 5 birds per acre. Pine barrens, on the other hand, probably run much lower, but we have only one such census, and this includes a cedar bog. We need more censuses of the pine barrens along the coastal plain, especially in the Southern States. These barrens extend over hundreds of square miles, and would undoubtedly lower the general average. Some pine-barren censuses should be taken in areas without water, otherwise they will be distorted by high

## HOW MANY BIRDS ARE THERE?

densities around the wet spots. Low bird numbers in the barrens will be counteracted quite a bit by the high densities which most likely occur in the wet riverbottoms near the coastal plain. Except for two woodland censuses from the Rio Grande delta, we have no records, as yet, from a southern river-bottom area, but I would not be surprised if some of them ran as high as 10 birds per acre.

Eastern fields, providing they are not cultivated, average about  $3\frac{1}{4}$  birds per acre. Cultivated fields would have far less. The only recent census of this sort that we have was taken in Kansas, and shows less than 1 bird for every 5 acres. This would be counterbalanced by the vegetation around farmhouses and farm woodlots in the center of these fields. In such a place, also in Kansas, we find recorded the extraordinarily high population of nearly 20 birds per acre. It is evident that birds nest around farm buildings and

farm woodlands, and range over the cultivated fields to feed, making it very difficult to compute densities in some farming country. Cooke's figure of  $2\frac{1}{4}$  birds per acre probably could not be easily quibbled with.

From our meager data, the western prairies and plains seem to average about 1 or  $1\frac{1}{2}$  birds per acre. These grasslands run into hundreds of millions of acres, so not to run too far astray in our count of birds in the United States, we should have more censuses from 'the range.' These should show bird populations under different conditions—heavily grazed plains, virgin prairie, sage lands, etc.

Birds seem to concentrate around wet places. A dozen censuses in bogs, marshes and swamps run between 6 birds per acre and 18, averaging 9.4. There are undoubtedly many places where marsh densities are even greater than 18. Anyone who has visited the vast Bear River marshes in Utah will

**TEST FOR THE AGILE.** *Pipits nest in tundra country and on mountain tops where few bird students venture. Censuses in such areas are greatly needed.*

Photo by Gayle Pickwell



conjecture about the number of birds there. The most extreme marsh density would be in colonies of the Tricolored Red-wing in California where nests of this nonterritorial species often total between 5000 and 10,000 on a single acre.

Records show that between 80,000,000 and 100,000,000 acres of land have been drained in the United States for agriculture alone. Other millions of acres have been drained with the intention of controlling mosquitoes. Considering that a marsh or swamp habitat harbors 9 or 10 nesting birds per acre and most farming country an average of less than 3, this means that between one-half and a billion birds have been eliminated from the face of this continent by the simple method of digging ditches. This need not be, for it has been shown that farms can have densities as high as 6 to 8 birds per acre, when the land is managed properly. In fact, most erosion-control measures result in an increase in wildlife. 'Slick farming,' without hedgerows and with fields plowed right up to the fence, leaves no place for the farmers' best allies, the birds.

To my knowledge, no one has ever taken a census of the English Sparrows, Starlings and Pigeons in the heart of a large city. Such a census should not be taken adjacent to a city park. We would also like to know the density of Robins, Chipping Sparrows, House Wrens, Yellow Warblers and other garden birds in typical communities where the city blocks are made up of frame houses on lots about 50 to 75 feet square. As there are at least 50,000,000 acres of urban land in the United States, it is important that we know more about its bird inhabitants.

We have little data on hundreds, if not thousands of specialized environments and plant associations, but if we are to get a good general idea of

America's bird life, we first need more information on the following major types of country:

1. Pine barrens, both with and without bog areas
2. Southern riverbottom country
3. Salt marsh, both drained and undrained
4. Prairie
5. Short-grass plains, grazed and ungrazed
6. Sage plains
7. 'Pygmy forest' (piñon pine and juniper association)
8. Western mountains
  - a. Foothill canyons
  - b. Chaparral slopes
  - c. Transition zone forest (this especially)
  - d. Canadian zone forest
  - e. Hudsonian zone forest
  - f. Alpine zone
9. Northwestern rain forest
10. Southwestern desert, especially low desert country away from water; in addition, censuses in desert country near water.

There are other areas that need investigation, too, but these seem to me to be most important now. Census plots should not be a hodgepodge of several types of habitats; they are most useful when they are consistent blocks of the same type, preferably at least 25 acres in extent.

My guess is that eventually we will find not less than 5,000,000,000 breeding birds in the United States and probably closer to 6,000,000,000. Of course there would be considerable fluctuation during the course of the year. In the fall there would be a great many more, as the birds that nest over the great expanse of Canada would then come crowding through, and each pair, under normal circumstances, would have been responsible for about two young on the southward journey. This would double the number again.

In the face of such near-astronomical figures, we realize that the small boy with the slingshot or air-rifle is a



Photo by Eliot Porter

**PRESENT BUT NOT VOTING.** *Like many other birds in the eastern woodlands, the Black-throated Green Warbler stops singing in July and is no longer recorded.*



Photo by Ludlow Williams

**FOR WHOM THE BELL TOLLS.** *The drainage of over 100,000,000 acres of marsh land has sounded the death knell for many marsh birds like the Sora Rail.*

negligible factor in the conservation of bird life. Preservation and improvement of the environment in which birds live is the thing that means most. We swing into action when we see the small boy shooting at a Robin (which he will probably miss), but we look on resignedly or give a hopeless shrug when we pass a crew of laborers 'manicuring' a park, cutting the undergrowth from a woodlot, or ditching a marsh. Yet the damage they do is far more wholesale. When a marsh is drained, the scores of Marsh Wrens, Swamp Sparrows, Rails, Bitterns, and Ducks that live there are done away with just as surely as if they had been systematically shot or poisoned.

Each time the annual breeding-bird census is published, I hardly can wait to get home where I can sink into a big chair and browse through the reports with the wealth of new information they contain. The possibilities in the conservation field are

almost endless. The National Audubon Society also conducts the Christmas census, but this is not at all like the breeding-bird census. The Christmas census, many people argue, is not a census at all, but a count. This is true, for the average Christmas census participant does not, and could not, try to find all the birds in a 15-mile radius in a day. He at best tries to run up a big list of species. It is a sort of game, an attempt to beat the records of past years. Except in a general way, these 'censuses' are seldom referred to, or analyzed, for the purpose of finding out little-known facts about bird populations. But we won't criticize them for this; the Christmas bird census, or bird count, as it should probably be called, is justified on recreational grounds alone. We needn't always take ourselves so seriously, and cast around for rational excuses, just because we get an inexplicable lift out of watching birds.

## HOW MANY BIRDS ARE THERE?

The breeding-bird censuses have limitless possibilities for the conservationist. One of the first things they show is that bird populations on most plots of land change but little from year to year. It is the strength of the environment that determines how many birds can live there. A hundred acres of woodland will have about the same number of birds from year to year. There will be no sudden doubling of the numbers on large tracts of land, or great reduction, unless the habitat itself changes suddenly. Over a period of years, trends in bird life can be seen and compared with changes that have taken place in the vegetation. Censuses should be taken of areas that are about to undergo a change. If a marsh is soon to be drained, a census should be taken of its bird inhabitants before operations begin; then another census the following year, to see what has happened to the bird life. Several years ago a census was taken on a new fill that had

been put over a salt marsh, showing the remarkably low population of 6 birds per hundred acres. Censuses on sprayed and unsprayed areas would be interesting. One such census, described in the *Journal of Wildlife Management*, tells of 154 birds on an unsprayed area, and 18 birds on a comparable plot that had been sprayed—a decrease of over 85 per cent. In a sugar-maple woodlot, where cattle had been allowed to graze, it was found that there was an average of only 1 bird per acre and a half. In an adjacent woodlot, protected from cattle, there were over 3 birds per acre, nearly five times the density. It doesn't take much imagination to see how enlightening these censuses can be to the practical conservationist.

It is often stated that there are probably more birds in the United States today than there were when the continent was an unbroken wilderness. I wonder about this. If we only had a few censuses from virgin areas, we

**HEARD BUT NOT SEEN.** *Clay-colored Sparrows are inconspicuous birds with an unmistakable buzzing song. Like many birds of the interior, they still await the census taker.*

Photo by S. A. Grimes





Photo by S. A. Grimes

**NOT YET COUNTED.** *The Acadian Flycatcher, along with many other birds of the southern riverbottom forests, has yet to be counted.*

## HOW MANY BIRDS ARE THERE?

could get some hint as to the truth of the statement. Irby Davis took a block, in the center of the Rio Grande delta's lush 1900-acre Santa Anna tract, and found a total of nearly 121½ birds per acre. This was in a climax elm-ash association, the same kind of forest that covered a large part of the Rio Grande delta before the arrival of settlers and citrus-growers. It is the only sizable tract of original 'delta' woodland left. Those who have spent time on the vast Singer tract in Louisiana, the last stronghold of the Ivory-bill, say they have yet to see a place where there are more nesting birds than in that virgin forest. I was similarly impressed by the high density of birds in the Santee swamp in South Carolina. Parts of it are called virgin, yet they are not quite in the original state, due to deposits of flood-silt on the forest floor and the rootings of innumerable razor-backed hogs. Even though the undergrowth has suffered, my impression was of an extraordinarily high bird population.

If we had a few careful censuses of virgin tracts—and there are not many of them left—we might be forced to revise our statement of the original abundance of birds. Some ecologists have jumped to conclusions by comparing the bird life of unbroken second-growth forest, where the trees are of the same age and the canopy unbroken, with the bird life of woodland 'edges.' They use this as proof of America's bird life 'before and after.' Uniform environments would naturally have low bird populations. It is only when the woodsman, irruptions of insects, or the natural death of trees open up clearings in the forest that the environment is diversified and the bird life increased. In most virgin woodlands, the larger trees are comparatively widely spaced and form their own edges. There is ground growth, young

trees growing up, and old trees dying; sunlight even reaches the ground in many spots. Birds are distributed vertically as well as horizontally. We do have a good idea of the acreage of original forest and original prairie in America. We could easily get some hint as to whether bird life has increased or decreased on the continent if we had a few more censuses in the few remaining primitive areas.

If you have never taken a breeding-bird census, you can look forward to a fascinating experience. In the twenty years I have spent watching birds, there have been few times when I felt so alive, yet so detached from the world of men, as when starting out before daybreak to explore some woodland. With dew from the long wet grass chilling my ankles, but warmed inside by a cup of coffee, the dawn chorus takes on a new meaning. Each bird is not there just by accident, but is an established member of a well-ordered community. With each year that the census is repeated there comes a deeper understanding of what goes on. The same Redstart or another Redstart can always be depended on at a certain spot in the woodland. The disappearance of a pair of Veerys leads to conjecture. The arrival of a pair of Barred Owls, one year, spreads a hush over the grove of trees in which they choose to nest. An infestation of cankerworms in the forest crown results in an increase in the birds which feed on them. In another spot, where a past irruption of these defoliators was too great for the birds to cope with, a large block of trees has died and the ground sprouted into brush, which is inhabited by Towhees, Chestnut-sided Warblers and others that were not found there when the forest roof was sealed. If you are a philosopher, and most naturalists are, a breeding-bird census will give you a thousand things to think about.



# The Nature of Things

By

DONALD CULROSS PEATTIE



WHEN I lived beside the Mediterranean, in the lull of the twenty years' armistice, I thought I loved that still and tideless sea with its colors of a peacock's breast. But there came a day, I remember, when, walking under the purpling grapes of my seaside arbor, I longed for the real tang of chlorine and for great ruthless combers piling in.

I heard the autumn song of the famed European Redbreast, a wistful whisper like talking to itself. And, God, I thought, will I never hear an American Crow again? Raucous and bold as Andrew Jackson, black as Uncle Tom, wise and full of pranks as Old Abe himself? I wanted distance, illimitable, uninhabited. I wanted that thing there is no room for in all the treasure box of western Europe—the grandeur of free solitude. I wanted to smell Wisconsin north woods again, odor of sunburnt grass and balsam boughs, raspberries cool with the woods, lake water icy to the wrists. I wanted to breathe Canada in the wind, the American wind that peels the clouds down to the horizon and tucks them under the belt of the world, that skies every hardwood leaf, and dries the air till Labrador comes clear from Belle Isle.

What breath of greatness I wanted most of all, in that stifled hour, I did not know until I got it, years later on the coast of Oregon. My wife and I had left our car and walked down to watch the Pacific, all of a plouter and spew, come foaming in with heavy rhythm,

the meter of an elemental poet. We watched the wan glitter on the thin last lips that spread out, curl behind the sand-girt stacks of rock, meet, kiss, bicker a little, merge in overlapping arcs, like one petal behind another. Then we lay down on the dry shore, on our sides, close to the incoming surf as we dared, and looked seaward, and laughed a little, because it is terrible to see the ocean like that, higher than the land, to see that off there, between us and Japan, there is a great moon-lifted bulge that has got to be compensated, dragged up here for hours upon the shore. And that there where your head lies now, your wind-whipped hair, your open eyes, your nostrils drawing in sweet oxygen, the green sea water has to come, and with it all its creatures, its children and demons, waving gills, staring from long-stalked eyes, crawling on jointed spidery legs, clinging, sucking, scavenging, retiring at the will of the satellite to wait again out there in the depths.

On the Oregon coast there is often little peace in the Pacific, and no blue about it, and what you feel in the air is the Aleutian Islands, Kamchatka, the Kuriles. Not too hard to remember that the Russians were early on this coast, Captain Kotzebue in the *Rurik*, with the poet botanist Chamisso aboard, and Baron (also Admiral) Wrangel. This is the faunal province of the seals and whales; this is the rough cold water where the diatoms, those glass boxes



Photo by Allan D. Cruickshank

**MOST GULLS LIKE TO FOLLOW THE SHORES OF THE SEA.** *Compared to the hardy offshore birds they are mere landlubbers that can neither really dive nor swim well.*

that are microscopic plants, are plenty. This is the kingdom of the giant brown kelps, their chlorophyll all masked with dusky pigment, the bobbling sea otter's cabbage, the slashing strops of oarweed, and bloated rockweed.

Offshore, I thought, there should be little Kittiwakes twinkling on the wing, Shearwaters cresting up over each hissing wave and down into each yawning hollow, rolling in their flight, one wing up and then the other. Long-winged Albatrosses would be following the ships, stocky Fulmars fishing, and Parasitic Jaegers hawking the Terns. There must be Petrels out there, I knew, gray as a nimbus sky, Surf Scoters and hardy Scaups, Arctic Terns, perhaps, upon migration between one polar sea and another, Guillemots like sea-going Pigeons, Murres riding the swells,

Ancient Murrelets and rasping Auklets.

Here, any landlubber will note, is scarcely a familiar bird name in the lot. These offshore birds have less to do with the western land birds, the Varied Thrush, the priestly Solitaire, the domestic Linnets and wayfaring Black-birds, than with the avifauna of New Zealand.

For he who comes down to the sea, and has business with the waters, enters another world of life. A world, even among birds, most remote of all from his own. The offshore birds have, many of them, almost never seen a human being. Even trees they know as a dark fringe upon that useless and hostile thing, the land. In all their lives some of them have walked but a few steps, at the most. On the land they had to be hatched, but you would say they

seem ashamed of this weak necessity. When they rest, it is on the waves; when they live to the full, it is on the wing. To them, a Gull must be a landlubber, a scavenger of dead fish, who can neither really dive nor swim well. A Curlew would be a complaining knock-knees who hugs the shore like a Greek mariner, and even a Cormorant might seem a fair-weather sailor.

Out there, in the thickest smoke of the ocean's battle with the rocks, I noticed sea palms growing. They are, of course, not palms but algæ, seaweeds unlike all others in that they stand up stiff as little trees, a foot high, or two at the most. And it is their preference to grow nowhere that the surf is not forever beating them. Half their lives—I mean every other moment—they are emersed, they are standing clear of water, breathing free oxygen, exposed to desiccation, forced to hold their palm-like foliage aloft. The next instant a ton of water, enough to break the spine of any swimmer, descends upon them. For a long moment, two, three—time to drown a man—they are submerged in the insanity of lashing water. They are twisted, torn by the roots, lifted by the hair. In vain. For as each wave draws back again, sucking in its breath, swallowing the foam at its own mouth, for another bite, the little sea palms rise up again into the air. They shake the brine from their heads as if they laughed, in the strength of all life which is stronger than the rage of ocean, and longer than the staying power of rock.

\* \* \*

Every time I go to San Francisco, I go down to Fisherman's Wharf, at the hour of sunset. That's when the big, sea-battered boats come in, trailing a cloud of Gulls. There, amid Gulls wheedling, sharp planks and tackle gently creaking in the subdued unrest

of harbor waters, I talk to the fishermen about the Farallones, and jokingly cajole the grinning sons of Genoa and Oporto to take me to those wild rocks forty miles out at sea. I know that nobody ever goes to the Farallones now. They are the most marvelous bird rocks on the coast, where the Murres and Puffins and Cormorants, the Guillemots and Auklets and Petrels once came in incredible numbers to nest, but man has worked himself out of his welcome there. First the Aleuts killed off the sea otters. Then, when in the gold rush days eggs in San Francisco were fetching prices high enough to buy the golden goose itself, the egg hunters came to the Farallones. They killed the parent birds; they robbed the nests, and wherever they went the Gulls came after, breaking the eggs the hunters missed. For forty years and more this slaughter went on, until the ornithologists got the government to put a stop to it.

Now not even the ornithologists, if I am rightly informed, can get permission to land on the islands, not in nesting time, at least. Dr. Grinnell, late dean of California birdmen, wrote me he had never been to the Farallones! Correspondence with Washington informed me that at the breeding season the chief of the Fish and Wildlife Service himself couldn't persuade the lighthouse authorities to let him land. For myself, I always carry with me a letter granting me the Coast Guard's permission to land at any other season but the nesting time. So that's why I go down to the wharf and talk to the swart men just in from blue water, pretending to myself that I might go where the fishermen go. They know me now, and joke me about how seasick I would be, pretending they might take me. It is good, I think, to have some islands in your cosmos that you long to visit and only by some miracle might reach.

## The Recovery of Birds from Disaster

By Ludlow Griscom

READERS of AUDUBON MAGAZINE (formerly BIRD-LORE) still remember the severe winter of 1940 and the cold and backward spring which followed. There was interesting news about winter mortality of birds in south Florida in BIRD-LORE, valuable information from Louisiana in the *Auk* (1940, p. 401) and numerous other notes scattered in various local organs. Subsequently there was an equally scattered and extensive literature noting the sharp decrease of various species the following spring in the Northeast, those affected wintering wholly or at least in numbers in the southern states.

To sum up this information as briefly as possible, mortality was definitely reported in the South for Killdeer\*, Woodcock, Phoebe\*, Tree Swallow, Brown Creeper, Golden-crowned Kinglet and Myrtle Warbler\*, those starred (\*) having suffered on a very large scale indeed. When, therefore, experienced and careful observers reported marked to very great decreases in the number of these birds the following spring in the Northeast, the obvious correlation was practically perfect.

But a second category arose, cases of birds reported in the Northeast as markedly decreased, where the literature did not give any reports of frozen corpses in the South. These birds were the Winter and Short-billed Marsh Wrens, the Hermit Thrush, the Blue-headed Vireo, the Savannah Sparrow. That they suffered winter mortality is an *inference*, the validity of which is based on the following essential facts:

(1) their winter quarters were chiefly or wholly in the area affected; (2) the evidence of their decrease was agreed to by the same band of experienced and careful observers; (3) the area covered was so extensive as to preclude a minor shift in population, such as a 'poor year' in some one migration highway only, a thing of annual occurrence somewhere with numerous species of birds; (4) the inconspicuousness of these little birds, their preferred habitats, and the relative scarcity of observers reduced to insignificance the fact that no frozen corpses were found.

Two other facts of interest and biological importance emerged. We now know that many bird species can be divided into what have been called 'populations,' with different breeding or wintering grounds, a different migration schedule, or perhaps different feeding habits. Disaster rarely, if ever, therefore, affects *all the existing* individuals of a species, and last winter was no exception to this rule. But some observers were astonished at finding practically no Tree Swallows in one place, and no diminution whatever in another; they seemed to expect that the decrease would be evenly distributed. In most cases we cannot even guess at the factors involved, because we know so pathetically little about the life history of most birds. But in the case of the Tree Swallow we can hazard a guess. The greatest mortality reported was in southern Florida, where such great 'freezes' occur once in forty-five years or so, and where the birds are wholly



Photo by Allan D. Cruikshank

**BLUEBIRDS PERISHED IN IMMENSE NUMBERS IN 1895. For two years they were noticeably rare but in an extraordinary recovery they reached their former abundance by 1900.**

## THE RECOVERY OF BIRDS FROM DISASTER

insectivorous. Quite a few Tree Swallows, however, wintered on the coast of South Carolina, where it was still colder, and the cold lasted longer. These birds did not perish in large numbers, because in cold spells they eat bayberries until a thaw brings a return of insect food. This local 'population' also departs northward earlier in spring. Now it is a fact that the Cape Cod breeding population arrives before the bulk of the birds near Boston, and it was also a fact last summer that the Cape Cod population was much less reduced than the one near Boston.

The second point of interest is the inference that many individuals (not species) were so weakened by the strain of a severe winter that their behavior the ensuing spring departed markedly from the normal for the species. As a matter of fact, this led to premature conclusions regarding the mortality suffered by the Phoebe and Short-billed Marsh Wren. Near Boston, Mass., for instance, the first Phoebes arrive the last days of March, the summer resident population is all in by April 10, and northbound transients pass through until about April 25. On this last date the past spring there were hardly any Phoebes, and a disastrous decrease was clearly indicated. A real 'wave' of Phoebes arrived April 30, however! Most significant of all, though, local observers deplored the loss of the famous breeding pair in Mt. Auburn Cemetery, Cambridge, known to have used the same nesting site since 1895. These birds *arrived on May 31!* Similarly the first Marsh Wren did not put in an appearance until May 18 instead of May 1, and several of the missing breeding pairs arrived June 8 and 9. While absolute proof is, of course, impossible, it certainly seems reasonable to account for such erratic migration

by supposing that the vitality of certain individuals was so lowered that the physiological development necessary to bring on the instinct to migrate north to the breeding grounds was greatly retarded.

Making all possible allowances for the factors discussed above, a glance at the table at the end of this article will show the decrease in percentages of the twelve species mentioned in Massachusetts last spring. It must be remembered that they are very rough estimates only, and reports from various sections of the state are averaged; in some sections it was more, in others much less than the figures given.<sup>1</sup> Lack of sufficiently detailed and comparable data makes it inadvisable to include a larger territory.

We may now turn to a much more important subject, both biologically and from the standpoint of human interest, the recovery of a bird from such a *natural* disaster as severe winter mortality. In the great majority of recorded cases, it appears to be so rapid as to be very surprising. Indeed, in my youth, I recall hearing it suggested that some 'mysterious biological urge' must be adduced to account for the series of particularly successful breeding seasons that ensue. Indeed, those instances where a bird has *not* recovered from such a disaster are exceptional, and a combination of other unfavorable factors is either known to or may be presumed to have existed. Certain famous cases are appended below.

The Bluebird perished in immense numbers in January and February of 1895 in the South. For two years it was noticeably rare, and disappeared from the periphery of its breeding range altogether. Its recovery was extraordinary and by 1900 it was as numerous as ever.

<sup>1</sup> I am particularly indebted to Professor S. A. Eliot, Jr., and Mr. David L. Garrison for assistance in securing reliable statistics.



Photo by Eliot Porter

**BROWN CREEPERS WERE UNUSUALLY RARE IN THE SPRING OF 1940. In the fall migration, however, these birds were for some reason exceptionally numerous.**

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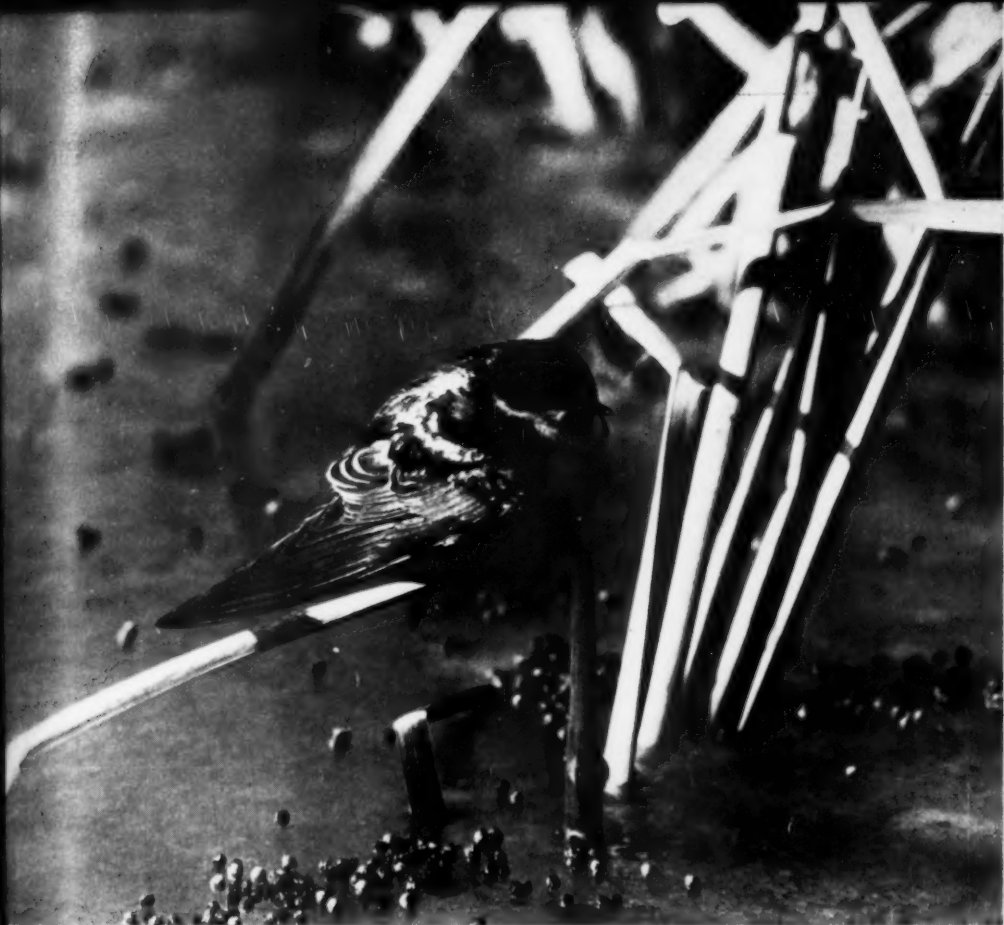


Photo by Allan D. Cruickshank

**TREE SWALLOWS ARE OFTEN ABLE TO SURVIVE AMAZING WINTER CONDITIONS.** *In cold spells they often eat bayberries until a thaw brings a return of insect food.*

The Woodcock suffered severely in the South in February 1899. No lessening in the hunting of this game bird took place in ensuing years and its decrease as a breeding species in much of the southern half of its range dates from this period, aided by the steady destruction of its coverts.

The Purple Martin, formerly a common summer resident, was almost completely extirpated from northern New Jersey to southern New Hampshire by a protracted period of cold rains in June 1903, leaving only a few scattered colonies. While common to the present day both south and north of this area,

this bird has never recaptured any of this territory, and the reason given was the occupation of all the boxes by House Sparrows and later by Starlings.

The Golden-crowned Kinglet was greatly reduced in the severe winter of 1917-18, but was back to normal numbers by the fall of 1922.

Returning to the species which were presumed to have suffered last winter, the table for the fall migration gives figures which in most cases differ from the spring figures. In certain cases recovery is marked after one breeding season only, notably the Killdeer and Woodcock. With the Marsh Wren,

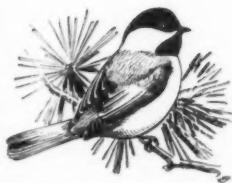
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which has no perceptible fall migration in Massachusetts, we must wait and see what happens this spring. In two cases the supposed winter mortality is open to grave suspicion. The Creeper and Kinglet had no spring migration worth mentioning, but both were exceptionally numerous last fall. Probably, therefore, something was the matter with the migration or the observers, rather than with the birds. We cannot be too careful in reaching premature conclusions, and the history of previous cases shows us that species suspected of having suffered a sharp reduction in numbers must be watched carefully over a period of several years.

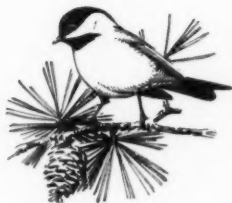
But we have learned that rapid recovery is apparently the normal thing in common, healthy, and vigorous species, other things being equal. Really to explain any particular case would be an exceedingly complicated research problem involving many recondite factors in the life history of the species. But it is certain that no 'mysterious biological urge' is required. The probabilities are that the normal percentage of certain annual losses decreases in arithmetical ratio as the total number of existing individuals decreases, provided that the total surviving population does not drop below the survival ratio of the species. The loss from disease, for instance, must drop very sharply indeed when only

the strongest and healthiest have survived a bad winter. The evidence of both external and internal parasites would be reduced. The chances of food shortage would also be reduced. In those birds which serve as food for other animals, a marked scarcity of individuals would tend to cause these animals to turn to another food supply. Examples could be multiplied. But common sense alone tells us that some such factors must operate under natural conditions, or else the carnivorous animals would long since have exterminated their food supply, the parasites would have committed suicide by exterminating their hosts, and every severe winter would be followed by the extinction of those species which happened to suffer most. The evidence is overwhelming that wild animals are adapted to overcome *natural* disasters; it is the destruction by man of natural conditions and the disruption of their normal biology that animals cannot endure, and which accounts for all those cases in this continent, where a permanent decrease has taken place. It is these animals that must have the understanding care and help of naturalists, conservationists, and nature lovers, if the scattered remnants of a once mighty host are to survive to gladden the eyes of our descendants, and bear mute but powerful witness to the wonders of natural evolution.

	Spring Decrease	Breeding Season Success	Fall Migration Net Decrease
Killdeer . . . . .	25%-40%	good	10%-15%
Woodcock . . . . .	60%	good	30%-40%
Phoebe . . . . .	25%-40%	?	15%-25%
Tree Swallow . . . . .	50%-75%	bad	75%-90%
Winter Wren . . . . .	60%	?	60%
Short-billed Marsh Wren . . . . .	75%+	?	?
Hermit Thrush . . . . .	25%-50%	?	10%-15%
Golden-crowned Kinglet . . . . .	75%	?	unusually numerous; very late
Brown Creeper . . . . .	75%	?	unusually numerous; very late
Blue-headed Vireo . . . . .	15%	?	normal numbers
Myrtle Warbler . . . . .	20%-30%	?	normal numbers
Savannah Sparrow . . . . .	25%-50%	?	15%-25%



## The Director Reports to You



THE WORK of an institution, like the work of an individual, knows Red Letter Days. In the newsprint, a great victory for the cause of an institution seems to break suddenly like a piece of miraculous good fortune, but victory in the headlines for the National Audubon Society is only the announcement of a long fight behind the scenes, of constant watchfulness, of careful planning. It is seldom or never achieved by any one individual, but by the exertions of many. When the National Audubon Society wins a sweeping drive for bird protection, it has you to thank as much as anyone else. For it is the size and the loyalty of the Audubon membership that lend the Society its weight at the council tables of conservation.

We're talking now, of course, about the victory won for wild birds in the Declaration of Policy and Program jointly entered into, after months of conference and discussion, by the National Audubon Society and the Feather Industries of America which probably controls over ninety per cent of all the wild-bird plumage for sale in this country. In this battle, of long standing, every president of the Audubon Society has at some time been engaged, and the lives of two Audubon wardens have been sacrificed.

### *Time Flies on Wings of Rhetoric*

PROBABLY you read, in *Time* for February 24, that when Mrs. Richard Hooper Pough, wife of the head of our Persecuted Species Department, came home two years ago with

an Eagle feather in her hat, her husband "with a cry like the Great Horned Owl, soared into action." The National Audubon Society, though, had a little difficulty in recognizing the voice of its Mr. Pough (pronounced 'Po' in case you've been wondering all these years) in this allusion to the deep barking *whaugh* of the Great Horned Owl. Like *Bubo virginianus*, our Mr. Pough *swooped*, rather than *soared*, upon a condition of affairs in the New York feather industry that has been as full of loopholes as a Swiss cheese. He picked up, in Gotham's warehouses and stores, "feathers of 40 species of wild birds, including the Whistling Swan, Osprey, Great Blue Heron. Siberian Storks, Philippine Pelicans, Argentine Rheas, drifted in through customs loopholes."

### *It's the Old Campaign*

ANYONE who knows the story of the National Audubon Society knows that the feather fight is its oldest battle, and that one of the cornerstones in its foundation was the idea of protecting the rookeries of the Egrets. But the fight is even older than the Society, and was envisaged by John James Audubon himself, and well back in the Nineties was already as hot in the consciences of American ornithologists as slavery in the minds of Whittier, Lowell, Thoreau, Parker, Garrison, and John Brown.

More than fifty years ago, our own Dr. Frank Chapman, then a New York bank employee, attracted the attention of ornithologists by his volunteer work

in recording, in shops and on street corners, the use of the feathers of wild birds on fashionable ladies' millinery. In 1900 the first legislation to protect Birds of Paradise, Goura Pigeons, Egrets, Terns and hosts of other wild birds, native and foreign, from the whims of fashion, was passed, and there were exciting scenes at the customs offices when American women, returning from Paris, had the forbidden feathers torn from their hats by the hand of the law.

#### *Celebrities Join the Fray*

**B**UT the legislation was still full of loopholes. In 1908 and 1910 and 1911 William Dutcher, then president of the National Audubon Society, and Dr. T. Gilbert Pearson, later to become its president, led the fight at Albany for fresh legislation. Nobody, according to Dr. Pearson in 'Adventures in Bird Protection,' was more prominent in the opposition to feather legislation than a Mr. Alfred E. Smith, who fought to the last ditch. But the bill was signed at last by Charles Evans Hughes, then governor of New York State. It was probably the best legislation that could then be framed.

Biggest loophole remaining, even after further protective legislation in 1913, was the constitutional rights in previously acquired merchandise. Courts in similar instances had upheld these as real, declaring that legislation cannot adversely affect property already owned, because of due process of law provision and provision against retroactive legislation. And there were other loopholes in the Federal and state plumage laws, and confusion introduced by differing interpretations of those laws.

#### *Final Solution in Sight*

**N**OW at last your Society believes that it is in a fair way to settling the matter once and for all. Working

with the legal representatives of the principal importers, dealers and jobbers, it has at last agreed upon a policy that, stripped of all Whereas and Now Therefore, and Hereunto Affixed, states that the Society and the Industry "believe that the best interests of conservation will now be served by obtaining the passage of legislation" looking toward "the cessation of all traffic in wild-bird plumage within the United States." Members of the feather industry will legally waive their constitutional rights.

In short, our model bill went to Albany in the friendly pocket of state senator Thomas C. Desmond, with the possibility of serious opposition already ironed out, for the feather industry is supporting, not opposing the bill. It was passed unanimously by the Senate, and by a vote of 140 to 4 by the Assembly on March 24. The bill now awaits Governor Lehman's signature. We shall hope for this action soon in order that we may urge enactment of the same law in other states before this year's legislative sessions are all over.

Gist of the legislation is this—that the feather industry has six years in which to dispose of its existing stock of wild-bird plumes, said stock to be inventoried now and filed with the New York State Department of Conservation. And at no time in the interim shall any more wild-bird feathers be acquired by the industry. Stock remaining at the end of six years must be surrendered and will be delivered for destruction or, distribution for scientific or educational purposes.

And that's not all. For it is agreed that on enactment of the legislation, the feather industry will deliver for destruction to the conservation forces of the state its entire current stock of Bald Eagle, Golden Eagle, Egret, Bird of Paradise, and Heron feathers, thus eliminating immediately any traffic in such plumage.



Photo by R. Vishniac

**MARIBOU STORKS HAVE LONG DOWNY UNDERTAIL COVERTS. In the feather trade, down of any sort is commonly referred to as "Maribou."**

In the U. S. Congress, we will seek repeal of the amendment to the Tariff Act which now permits importation of wild-bird plumage for the manufacture of fish flies. Our first legislative step was taken in New York State, though, since the feather industry is practically centered in New York City. And we hope and believe it will prove the decisive move, after which all further manœuvres may be easy and logical progressions.

### *Rolling Delegate in California*

WHEREVER in the Golden State a station wagon draws into town with *National Audubon Society* painted on its doors, crowds gather and people ask questions. Especially when they see the friendly face of Bert Harwell, our California representative. Bert can imitate almost any bird in the California avifauna. Former chief naturalist at Yosemite, he is used to crowds; he knows how to handle people; he has the patience to answer the same question a thousand times.

Always alive to public relations, California chambers of commerce see in the newly instituted Audubon Wildlife Tours in California good travel promotion. Refuge managers are glad to see Bert coming with a wagon-load of visitors who will publicize their programs. Communities are aroused, wherever Bert's station wagon rolls, to appreciate local wildlife as an asset they had not yet quite realized. California has long understood that beauty is a cash crop; it is coming to understand that there are other kinds of beauty than the old railway travel folder type. Vermilion Flycatchers, for instance, Phainopeplas sailing from one desert shrub to the next on their handsome wings, Sandhill Cranes, Whistling Swans and White Pelicans of the Sacramento valley, wide-winged Eagles and sparkling Hummingbirds.

And wherever Bert sets his foot, new Audubon Societies seem to spring up, like flowers in the footprints of spring. At Marysville, in the Sacramento valley, where Duck shooting has long been an established industry and a chief form of 'bird study,' he calmed fears that we are trying to stop legal shooting, and after speaking to practically every organization in the community, he left behind him the Yuba-Sutter Audubon Society. He found time to complete the formation of an Audubon Society in Stockton and another at the state capital in Sacramento—a strategic place for the interests of wild-bird protection. Calls are coming from Napa and other Sacramento valley towns for his aid in creating Audubon Societies. It is our wager that his six weeks down in the Coachella valley (Palm Springs region) will result in the formation of at least one more affiliated society.

California has long had five Audubon Societies, most of them located on the coast. That's a lot of societies for a state of that population, but not nearly enough for a state unsurpassed in the richness of its bird life, for such sheer geographical extent (it's the second largest state in the Union), or for the preservation of natural beauty in a commonwealth that lives in part by its charms.

At the present rate, Bert and the Californians will have doubled or tripled our alliances within a year. It all goes to show that what is needed first and foremost is a rolling delegate, charged with enthusiasm, able to address men's and women's organizations with equal ease. Of all persuasive personalities, Harwell has one of the most irresistible we remember to have met in a highly varied contact all over this country. Two years ago our prospects for intensive activity in California were poor. Now, by virtue of a special bequest by a California citizen, Mrs.

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Regula W. Albertus, of San Rafael, we can take up an attitude of friendly aggression. Anybody in any other state, with similar state pride, can find us where we live, just across the street from the Pigeons and Starlings of the Metropolitan Museum.

### *West Coast Wonders*

THE California tours got off to a good start. Record-breaking rains have not succeeded in damping the spirit behind the tours. The Peck-Judah Travel Agency, 672 Market Street, San Francisco, and 409 West Fifth Avenue, Los Angeles, which is handling the tour enrollments, reports many of them already sold out and others fast filling up. In March and April, Bert will be leading his cohorts beside the Salton Sea, our American Dead Sea, well below sea level, where, in the midst of an intensive desert, the tourists will be shown White Pelicans, White-faced Glossy Ibises, Fulvous Tree-ducks, and, at least by April, Gull-billed Terns.

This is a country, too, of Verdins and Phainopeplas—just to flash a few of the many unfamiliar-sounding names of birds you will see and hear down there near the Mexican border. And you'll come back with stories of Wrens as big as Red-wings and as noisy as Jays—and everybody will hoot and say that you've 'gone California.' And you won't care, because it's true, and so are the wild palms of the lonely oasis of Twenty Nine Palms where Bert will take you, and the fantastic Joshua trees of Joshua Tree National Monument, whose age nobody knows and even the botanists can't tell. And you will have seen the desert in bloom. Don Peattie tells us he is betting on it to flower this year, after unprecedented rains, as one carpet of dancing flowers. In dry years many of the desert flowers do not blossom at all.

### *Asilomar Assembly*

IF YOU miss the flowers and the desert tours, you'll want to be in California for the first State Convention of the National Audubon Society. For we're moving in bodily on California, to stay. And our opening campaign will start at Asilomar on May 9. Asilomar is on the Monterey peninsula, and by many considered the most unique and enchanting spot on the whole California coast. Near-by is Pacific Grove with its fine natural-history museum, and Carmel (artists, poets, and such, as plentiful as Pigeons in a city square) and Monterey (fishermen and First Families). Asilomar itself is among the famous Monterey pines (which so struck the admiration of the early British collectors for the big nursery houses), and its snow-white sands run down to the rocky beach.

But really we don't know how to tell you about the whole Monterey peninsula, if you don't know it. Such twisted shapes of ancient cypresses leaning out over the sea, such clanging buoys and drifting mists out of which rise the sunny hills of middle California! Such flowers dancing down to the rim of the Pacific, such sea anemones and exquisite seaweeds in the tidal pools! It's like a California-fied Maine, with a touch of the Riviera—say Antibes or Cape Martin or Hyères—but always with a more northern saltier tang. Whatever you do, don't miss Point Lobos State Park, hard by, with its sea lions, rich tidal pools, White-crowned Sparrows tearing at the petals of California poppies, and fields thick with Mariposa lilies.

In such settings you will hear the convention's speakers. Bert Harwell will be there—or maybe you'll think it was Meadowlarks and Valley Quail. Dr. Gayle Pickwell, the well-loved California naturalist, will speak, and



Photo by Laidlaw Williams

**A NUTTALL'S SPARROW FAMILY.** *Those who attend the meeting at Asilomar will see many of these coastal White-crowns.*

so, too, will Dr. Alden Miller of the University of California at Berkeley. Koford, 'the Condor man,' as he is rapidly coming to be known in California, will, with Dr. Miller, report on the preliminary study for the preservation of the Condor. Your Executive Director will also be present to say a few lines, and Don Peattie says he'll be there if he isn't in Texas.

One of the features of the convention will be a three-ring photographer's exhibit and contest. The first exhibit is to feature some nature subjects in the usual matted enlargements. There is an abundance of suitable wall space and bulletin boards at Asilomar for such a show. In the second feature, each contestant will submit his best ten Kodachrome slides of nature subjects. Prizes will be offered for the several best entries, and prize-winners will have a special showing of the pictures at the banquet meeting, Saturday night, May 10. Finally, Kodachrome enthusiasts will submit their *one best shot* for special judging.

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### *Hot off the Press*

**H**ERE it comes—the book you've been waiting for. May 2 is its birthday, and Doubleday Doran its publisher. 'The Audubon Guide to Attracting Birds,' edited by your Director, is meaty with the research and tested knowledge of bird-wise authorities the world over. Most of the text was written by Roger Tory Peterson, and other chapters are by Dorothy Treat, Richard H. Pough, and its editor. You will find a color plate by Peterson, some lovely halftones, and a number of pertinent line drawings.

To whet your appetite, here's the menu:

How, When and Where to Look and Listen (Aids to Identification and Listing); Bird Photography and Banding; Attracting by Planting; Attracting by Artificial Feeding—by Providing Nesting Boxes—by Providing Water; Attracting Waterfowl by Creation of Watered Areas; Our Attitude toward Predators; Trespass and Your Rights;

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Maintenance of Sanctuaries; Bird Attraction an Educational Community Project; How You Can Help Protect Our Wildlife. And for dessert there's an appendix giving plants attractive to birds in the northeastern states, plus a list of further reference material.

### *Here Come the Boys and Girls!*

AND still the youngsters come thronging to the banner, from Alaska to Trinidad, and Hawaii to Nova Scotia. The Audubon Junior Clubs show a daily registration of between two and three thousand, an increase of about thirteen per cent over the same time last year, with the Pacific coast young folk leading the way, Washington ahead of California by a nose.

Whistling the children in, like Pied Pipers, are the Audubon Nature Campers. Through the efforts of Miss Alice Seay, 1939 camper, and her friend Miss Pearl Deen, Nature Study Supervisor, many clubs have been enrolled in Memphis, Tennessee. And Miss Gertrude Clark, 1940 camper, of the Peabody Museum in New Haven, has been directly responsible for enrolling 67 clubs, comprising 1364 children! Many other campers, especially in Maine, have been organizing Junior Clubs, and we have again had coöperation this year from the widely read children's paper, *My Weekly Reader*, which last year brought more than 50,000 children into the fold.

And Roger Peterson says that the Junior leaflets for 1941-1942, are finished—on the Sparrow Hawk, Song Sparrow, Tree Swallow, Spotted Sandpiper, Rose-breasted Grosbeak, Cardinal and, for western use, the Steller's Jay and Black-headed Grosbeak.

### *Smoke from a New Chimney*

THOSE busy and helpful alumni of the Audubon Nature Camp will rejoice to hear that lumber for the new

Alumni Building is ordered, and the head carpenter ready to go ahead as soon as the frost is out of the ground. By opening day of the 1941 season we'll have its snug comfort for rainy days, with a fire blazing on the hearth. And a bill to pay—for wartime has sent costs soaring over the estimates. But just two dollars from every camper who has not yet contributed would put us in the clear.

Camp enrollments are coming in daily, and only a few places are left in the first session. That's the time—early June—to see and photograph Warblers, Chickadees, Swallows and many others. Shall we mail you a camp prospectus?

### *In the Mail Bag*

DID you get a letter from your Director in February? And did you respond? Then you are one of the many whose welcome support of the 22 trained Audubon wardens who patrol more than 3,500,000 acres of land will help to meet the \$25,000 yearly cost of such protection for the birds. If your donation hasn't yet come in, Audubon House, as it gratefully counts the returns, will be looking for it.

New members, too, were invited, in another letter that bore the dashing signature of John Kieran, chairman of the National Membership Committee, and already acceptances are flowing in, since no one can be more persuasive than that walking 'Bartlett's Quotations,' our nature-wise chairman.

### *'Kingfish' Out, Blue Geese In*

UP TO THE Crescent City, from Rainey Wildlife Sanctuary, came Warden Dick Gordon, to meet your Executive Director, bringing reports of a concentration of 2000 Geese, including a large proportion of Blues and Lesser Snows, at the sanctuary. Three Whistling Swans have joined the Geese. Dick has been taking pictures of the

concentrations of Geese and helping Leo Pavelle and Albert Simmons to get Goose and Duck pictures. By last reports the Duck population has fallen off to about 600 Canvas-backs and about twice that number of mixed Scaup, Ring-necks, Mallards and Pintails.

In the Pelican State your Executive Director found that the clearing out of the last of the old 'Kingfish' political machine has resulted in a fine spirit of coöperation in every way with our conservation program. The new state governor, Sam Houston Jones, whom your Executive Director met in Baton Rouge, is heartily with us.

*Scouts - - 'Tenshun!*

**D**OWN in Brownsville your Director found Warden Blanchard as active than ever. He is doing his bit to help save the White-tailed Kite, putting up our Kite posters in public places and schools. There is need of conservation education among many school-age citizens of 'the Valley,' says Blanchard. This winter he has several times encountered Boy Scout troops out with air-guns, shooting Hawks, Gulls, and various legally protected birds, under the leadership of Scout masters. On each occasion he has given them a friendly talking to.

He tells us that several Scout leaders have a hobby in Indian craft, and are consequently eager for Eagle, Owl, and Hawk feathers. Legitimate enough though it might be to take these from birds found dead, the purpose of training Boy Scouts is certainly not to make gunners of them. Warden Blanchard thinks that the war fever is making everybody want to carry a gun and shoot—with large birds the first victims. Blanchard attended the Scout convention at Brownsville, from February 8-10, and got in some 'licks' for bird protection.

*Forbidden Feathers, Endangered Doves*

**A**ND speaking of feathers—Warden Blanchard took a notion to go window-shopping in Brownsville among the displays of ladies' hats. He found such illegal feathers as Condor, Eagle, Albatross, and Blue Heron plumes on Brownsville millinery.

South Texas, writes Warden Larson, is waking up to the fact that if it should lose the White-winged Dove it would sustain an irreparable loss. For many years this beautiful little game bird has been peppered, in season and out, on both sides of the Mexican border. But 'the Valley' is worried now, and that's a relief to Audubon House. Texans are beginning to talk White-wing protection to their state senators. When others begin to share our worries over the birds, and initiate their own legislation, we have high hopes. Writes Warden Larson: "It appears that quite a number of hunters are getting somewhat conservation minded." That's a sentence hedged about with qualifying words—always the mark of a veteran at life's battles. In less optimistic moments he adds, "About all you can do around here is talk conservation."

*Wardens Are People*

**Y**OUR Executive Director has always meant to tell you more about the wardens, and the highly specialized type of man it takes to do the job. A warden has to get on with hunters (sometimes do more than 'get on' with hard-boiled law-breakers). Yet he must also be able to speak before school children and women's clubs, and business men's clubs. He has to know his birds from afar, by a single call, by one distant view of a wing stroke; he has to be at the same time a practical man with boats, cars, and guns. He has to put the work he is doing ahead of everything else, and as in the case of a fireman or

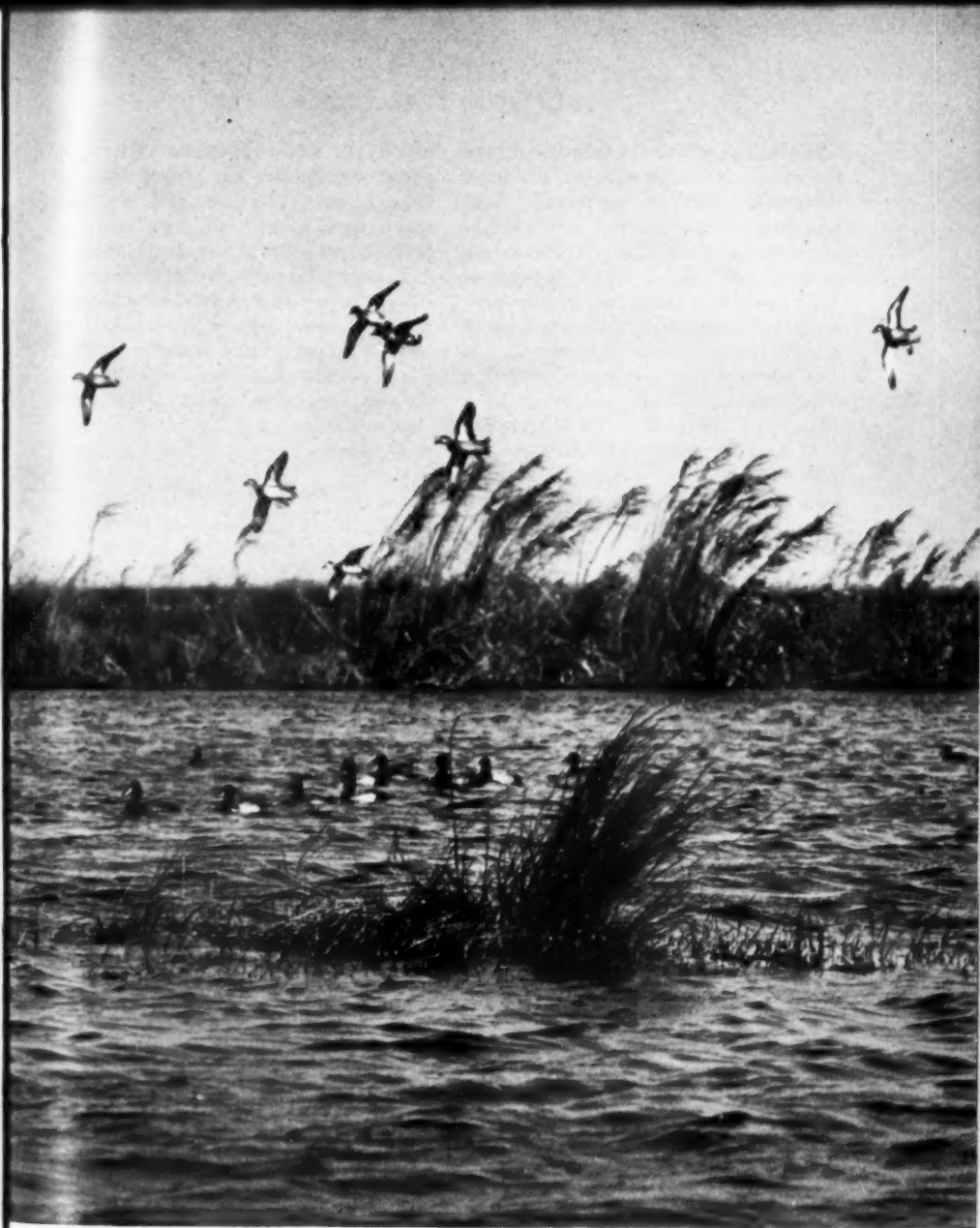


Photo by Leo Pavelle

**A WINDY DAY ON THE RAINEY.** Dick Gordon, the warden, helped Leo Pavelle get this fine camera shot which conveys the mood of the marsh as well as could any painting.

lineman, the worse the weather is, the more he may be needed in the most inaccessible parts of his patrol. Even the routine of his duties has some of the sanctity of faultless performance we demand from a doctor or the engineer of a locomotive. Devotion, promptness, no error for margins—these are some of the demands that Audubon House, and you yourself, make upon our wardens.

Month in, month out, year after year, these men whom you keep in the field by your generosity, stay on their jobs. Their reports come weekly to this desk, impersonal but faithful with detail: "Mending the boat engine," "patrolled as usual," "stopped hunters from shooting on highway," "found dead Herons—trying to discover the violators," "checking up on hunter's licenses, Duck stamps, game taken, seeing guns properly plugged," "on the war path," "secured arrest of hunters shooting Egrets," "patrolled the islands by boat," "seventy-five miles by car, trying to find where sanctuary birds have gone after storm."

Sometimes the reports contain items set down in few words, but full of feeling. From December 23 to 27—the Christmas season so merry for most of us—one of our wardens this year was, for the first time in a long while, not active on duty. "Unable to be in the field on account of illness and death of my son," is the laconic summary. The day after, his report resumes with soldierly performance—"spotting Pintail, Teal, Lesser Scaup and Redheads," "noting White Pelicans and Egrets," "preaching conservation."

Births and marriages, too, crop up almost apologetically on the severe form sheets, so carefully filled in by the wardens, accounting for all their time from sun-up to sun-down. To us, here at Audubon House, these matters among the wardens seem like family concerns and go straight to the closest feelings

of all the staff. They haven't, your Director supposes, any proper place in these pages. Yet often and often he wants to tell you that these men are human, and at moments might be called upon to be something rather more. If you think they do a good job—there's a way to show them. You can send in your Sanctuary Fund donation—now. We can reward them only in proportion as you understand them and realize that as the friends of the birds they are your friends.

### *Shades of Coventry!*

**B**OMBBS to the number of 31,900 every five weeks, at the rate of 1276 a training day, or 160 per daylight training hour, not to mention 385,880 rounds of ammunition to be expended on ground targets every five weeks at the rate of 15,438 per training day or 1930 per daylight training hour. Such is the program for the Matagorda Peninsula and the eastern half of Matagorda Island, together with the waters in the Gulf seaward therefrom on the Texas coast. Under the existing program of the Army Air Corps, with headquarters at Randolph Field, Texas, there is but one vestige of a silver lining from the birds' standpoint, namely, that the program will not be ready to start until August 1, when this year's nesting season on the sanctuary islands should be happily over.

Army Air Corps headquarters in Washington had been contacted and assurances in writing had been given the Society. Investigation in the field by your Director, however, disclosed that the local commanding officers in the bomb and machine-gun target areas had received no instructions from Washington, and were proceeding in ignorance of any commitments made. Prompt, courteous and sympathetic was the response of those local commanding officers. This time it looks like results. Lieu-

## THE DIRECTOR REPORTS TO YOU

tenant Colonel Holden, at Randolph Field, Texas, evinced deep interest in such adjustment of plans, and particularly in methods of procedure, as will truly minimize disturbance and damage on the mid-Texas coast; it is feared, however, that such disturbance may be unavoidable during the nesting season of the birds in 1942. Captain Crabb, 21st Reconnaissance Squadron at Miami, immediately issued order stopping all use of Florida Bay for bombing and machine-gunning practice. Lieutenant Commander Pirie, of the U. S. Naval Air Station at Miami, gave every assurance that steps would be taken at once to change methods or locations in the event of reliable report of any disturbance or damage to birds or other wildlife concentrations by bombing and machine-gunning activities in the Glades northwest of Miami.

Time was grabbed by the forelock as regards location of bombing and machine-gunning sites on the south Texas coast, where it had been proposed

that areas include the mouth of the Arroyo Colorado, close to our Green Island and Three Islands Sanctuaries, and another section southward that would take in one of the best Duck areas at Laguna de los Patos. Land somewhat to the northward, where conditions are such that there is little wildlife, may, and we hope will, be just as advantageously used by the Army Air Corps.

### *Liaison for Defense Agencies*

WITH an abundance of illustration at hand of the need of advance consideration of biological consequences, not only as regards sites of bombing and machine-gunning ranges, but also those of airports and cantonments, and as to pollution from new munition plants, the President of the United States has requested that a Liaison Officer from the U. S. Fish and Wildlife Service keep informed as to the activities of defense agencies which may seem damaging to wildlife, and

***EVEN SPOONBILLS ARE NOT SAFE FROM BOMBERS.*** *Army Air Corps training calls for the dropping of more than a thousand bombs a day not far from the Spoonbill colonies on the Texas coast.*

Photo by Allan Cruickshank





Photo by Josef Muench

**THE FORESTS OF THE HIGH SIERRAS ARE AMONG THE WORLD'S MOST BEAUTIFUL.** *We wish someone would take censuses of the breeding birds in these montane wilderness areas.*

## THE DIRECTOR REPORTS TO YOU

that Secretary Ickes of the Department of the Interior, upon report from the Liaison Officer, undertake to clear the matter with the agency concerned.

The Society's policy has been and is to urge the adoption of Federal Government policy that no selection of sites for target ranges, airports or contonments be made by either the Army or Navy until after the advice of the U. S. Fish and Wildlife Service has been obtained; furthermore, that the appropriate officers of the Army and Navy, both at Washington and in the field, be requested to cooperate with the Society in endeavoring to minimize the disturbance of wildlife, not only in selection of areas but in the methods of operation once the target ranges are established.

### *Rat-a-Tap-Tap*

**A**UTHENTIC information received at the last minute before going to press states that some 4,400,000,000 22-rim-fire cartridges will be made in the United States during 1941; that sporting goods houses are selling more 22 rifles than ever before and that there is a tremendous revival in target shooting, which, as you well know, covers everything from insulators on telegraph poles, and signs along the highways, to bird and other animal life.

And so all the greater is the vast need for increased public education as to the values and joys of an appreciation of our wildlife. Now is a good time to promote in your communities legislation to ban all shooting from and across highways.

### *Saving Southwest Florida*

**F**OR over a decade the Everglades National Park has been spread upon maps and has been in the forefront of the thoughts of the energetic Secretary of the Everglades National Park Asso-

ciation, our good friend, Ernest F. Coe, as well as directors and members of that association; of the Chairman of the Everglades National Park Commission, George O. Palmer; of the Directors of the National Park Service, Horace N. Albright, Arno B. Cammerer and now Newton B. Drury. Our President Emeritus, T. Gilbert Pearson, devoted time and effort to the promotion of this park a decade ago and our Director William P. Wharton, together with Frederick Law Olmstead, made a special trip into the area and an excellent report of recommendations at that time. The National Parks Association has bent its energies to the promotion of the establishment of the park. Yet it has not been established.

Oil is the nigger in the woodpile. Naturally enough the land-owners, including the state, do not wish to transfer title without reservation of mineral rights. The National Park Service cannot properly accept title and grant such reservation. Such is the stymie.

At a recent meeting in Tallahassee with Governor Spessard Holland, your Director ventured, with the approval of parties at interest, to propose that the U. S. Fish and Wildlife Service be requested to acquire title to the lands with grant of mineral reservations with reasonable time limit; with clause which would permit the Government, in the event of the development of oil in paying quantities such as to render the area unsuited to either wildlife refuge or park status, to retrieve its investment through a share in the royalties; furthermore with the understanding that, upon the elimination of the oil issue with the expiration of the time limit, without production of oil in paying quantities, the area would be transferred to national park status if, at that time, it might seem wisest so to do. By this plan early administration

of the area as a wildlife refuge by the Federal Government might be attained, yet the possibility of establishment of the park retained. This proposal seemed to meet with general approval and it is expected that the plan will be pushed. It is the official policy of the Society to promote establishment of a Federal Wildlife refuge in the proposed Everglades National Park area.

*Water the Keynote*

NEITHER refuge nor park would be worth a nickel if the minimum water-table control program in south Florida were not satisfactorily concluded. It is good news that the Soil Conservation Service, in coöperation with the State of Florida and some 35 other agencies, is making considerable headway with that plan. The engineering problem is relatively simple and the available water-supply, if controlled, adequate for all purposes. And so there is hope that the great bird rookeries of former years at the heads of the rivers on the southwest Florida coast, and here and there at 'heads' and 'strands' throughout the Glades, may again become one of the spectacular wonders of tropical Florida. It now looks as though this year's crop would be excellent.

*Tours in Texas, Too*

NOT to be outdone by all the hullabaloo about the birds of Okeechobee and the Kissimmee, the Lone Star State is about to parade to Audubon tourists, the colorful birds and other wildlife of the coastal lagoons in the Corpus Christi-Tivoli region of Texas and on the Blackjack Peninsula, the site of the Federal Aransas Refuge.

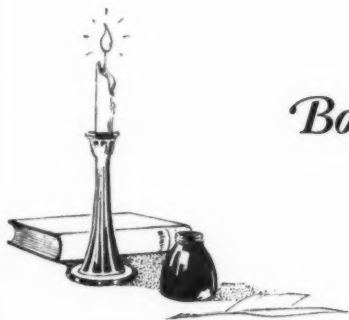
None other than Alexander Sprunt, the Society's southern representative, who has delighted so many tourists by his conduct of the Florida and Virginia

tours in '40 and '41, will personally lead these Texas tours in May and June this spring. These will be a treat to Texans, to birding enthusiasts from near-by states and no doubt to many of those who have had the pleasure of participating in other tours of the genus Sprunt.

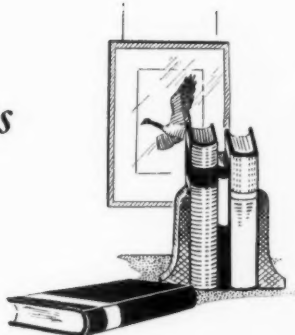
Through the courtesy of the U. S. Fish and Wildlife Service, boat will be available to visit the Audubon sanctuary islands in the coastal lagoons— islands covered with a thick low growth of cactus, huisache and Spanish bayonet— islands gleaming in the bright sun from afar, with coverlets of pink, blue, white and brown birds nesting in profusion. Here you may see the spectacularly beautiful Roseate Spoon-bill; the American, Snowy and Reddish Egrets; Louisiana and Ward's Herons; dotted all over the beaches and in the grass are thousands of nests of Brown Pelicans, Black Skimmers, Laughing Gulls and a startling and varied array of exquisite Terns— Caspian, Royal, Forster's, Least and Gull-billed.

By station wagon the tourists will visit the Aransas Wildlife Refuge on the Blackjack Peninsula, where wild Turkeys and deer abound, javelinas and armadillos may be seen, a few of the excessively rare Whooping Cranes may be found lingering from their winter sojourn, and a host of strange and beautiful birds, such as the Scissor-tailed Flycatcher, Cassin's Sparrow, Sennett's White-tailed Hawk, Audubon's Caracara, Snowy Plover and Painted Bunting.

Base for the tours will be at the Jack Hagers' clean and comfortable Rockport Cottages on the Hug-the-Coast Highway, but a few hours drive from Houston and only thirty miles from Corpus Christi, a boom town in years of depression. The Hagers and their cottages are famous with birders on the Texas coast.



## Book Reviews



**WILDLIFE CONSERVATION.** By IRA N. GABRIELSON. Illustrated. Macmillan Co., New York, 1941. 250 pp. \$3.50.

Reviewed by  
GUY EMERSON  
*President, National Audubon Society*

This is an important and authoritative book in its field. Its author is the Director of the Fish and Wildlife Service of the Department of the Interior, which Service continues the activities of the division so long familiar as the Bureau of Biological Survey. The tone and viewpoint of the book are admirably suited to the purpose which it aims to accomplish.

In these days of shrill attack and shrill defense, of dogmatic expression and free rein to prejudice and preference in newspaper columns and public speeches, it is not usual to find an approach to a controversial subject as sane and factual and withal as clear and interesting as is this book of Dr. Gabrielson's.

What he sets out to do may be described in his own words from his preface: "This book is not intended to give a complete analysis of all the complex factors that affect the conservation of wildlife. It is rather an effort to put into simple language the basic facts in this field and to emphasize that the various programs for the conservation of soil, water, forests, and wildlife are

so closely interwoven that each vitally affects one or more of the others. All are phases of a single problem—that concerned with the restoration and future wise use of our renewable natural resources."

In carrying out this study, the author subdivides his material into sixteen chapters, the chief of which cover soil erosion, water conservation, forest conservation; the relationship between forestry and wildlife, and between grassland and wildlife; resident game, migratory birds, fur animals, non-game birds and animals; rare and vanishing species, predator relationships, and wildlife refuges. Certainly few Americans can fail to find matter of deep interest in one or all of these chapters.

Particularly, for members of the National Audubon Society, this book should be required reading. This Society has attempted to preach and inspire a love of nature as a whole. Especially in these years of turmoil and unrest, the Audubon Society's message has been that the strength and dignity and beauty of nature are the greatest healers of frayed nerves and perturbed spirits. The fight to protect and maintain a reasonable volume and balance in outdoor life for the future uses of the American people is one of the great causes of our time; and a careful reading of Dr. Gabrielson's book would indicate

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that his viewpoint and that of the National Audubon Society are not far apart.

It is certain, at least, that the Director of the Fish and Wildlife Service regards his work as involving no mere administrative job, but rather a long hard fight. His book concludes with these words:

"The conservation battle cannot be a short, sharp engagement, but must be grim, tenacious warfare—the sort that makes single gains . . . until renewed strength and a good opportunity make another advance possible. It is yet to be demonstrated whether the conservation forces of America or the American people can wage that kind of fight. Much of our vaunted success in 'conquering a continent in record time' has been in reality appalling wastefulness. Now America faces the hard task of putting to work natural forces in restoration and of staying tirelessly on the job throughout future years."

In the judgment of this reviewer, one of the best steps that the "conservation forces of America" can take, as a preliminary to a much-needed common ground of understanding and approach to our common problem, is to read and reread 'Wildlife Conservation.'

Thirty-two excellent photographs and twenty-four charts add to the interest and usefulness of the book.

BIRDS OF THE GREY WIND. By EDWARD ALLWORTHY ARMSTRONG. Illustrated. Oxford University Press, New York, 1940. 243 pp. \$4.50.

Reviewed by  
HENRY SEIDEL CANBY  
*Editor, Saturday Review of Literature*

This is a book of that admirable variety in which a lover of birds recounts his experiences with a more than adequate scientific background and yet with the purpose to make the birds live and move in their natural environment. Furthermore, Mr. Armstrong is an ex-

cellent writer with a literary sense, which enables him to evoke the life and scenes of his bird and prevents him from that gushing and over-descriptive narrative too characteristic of the amateur writer on nature. It should be added that, with what apparently is the simplest of equipment, he has provided a remarkable series of photographs, often of the actual birds described in the text and, where he has been unable to get just the right photograph, has borrowed from his friends.

The scene is Ulster in Ireland and particularly the northeast coast from Strangford to Rathlin Island, which, as the old chroniclers state, looks out on the 'Northwest Ocean.' This is, of course, a region of sea birds, where perhaps the Great Auk made one of its last appearances, and many of these chapters have to do with Swans and Guillemots and Mergansers, all described as Thoreau described his birds, in action, and for their personalities, in so far as birds may be said to have personalities, and that is quite far.

The land birds come in to this agreeable narrative also. The Rooks, which are particularly well done, and Ravens and Cuckoos, closely studied for their egg-laying habits which are even more peculiar than one supposes; and Sparrow Hawks and Owls. The book begins with childhood experiences with such birds as these, and continues until Mr. Armstrong is using all the resources of what clearly is an excellent scientific education, in the attempt to explain some of the remarkable scenes he witnesses.

As is well known, the ancient Irish literature was the first to record a real feeling for nature, particularly for plants and birds. Mr. Armstrong is well read in this Celtic poetry and, as a Rambler through Ireland, knows the places about which much of it was written, and is able to give these modern studies an extraordinarily interesting tradi-

## BOOK REVIEWS

tional background. Indeed, one can only say of 'Birds of the Grey Wind' that it is a model of what a nature book should be which proposes to be literature as well as science. I wish that it might have been written in, and about, America.

NATURE RECREATION. By WILLIAM GOULD VINAL. Illustrated with 67 halftones, 7 charts and diagrams. McGraw-Hill Book Co., New York, 1940. 322 pp. \$3.00.

Reviewed by

ARTHUR B. WILLIAMS

Curator of Education, Cleveland Museum of Natural History, and Naturalist for the Cleveland Metropolitan Park Board

This book is a plea for trained leadership in the interpretation of nature. It is also a storehouse of ideas for the practical application of nature knowledge to the educational process. In other words, if you're looking for vital program material in nature education you can find it here.

The first half of the book is devoted to the philosophy of nature recreation. The author recognizes that "most people who go into the woods do not know what to see, what to hear, or what to think," and that "often teachers are masters of scientific knowledge when it is in a book, but have no time for science when it is outdoors." The opportunity for understanding nature through personal contact and experience has never been greater than it is now. What once seemed to have become a prerogative of the wealthy, has now, through the development of parks, landscaped boulevards, nature trails and trailside museums, become a major cultural resource of democracy.

Dr. Vinal's kind of nature education is something that reaches the individual through the medium of personal experience, and doubtless for this reason he uses the word "recreation" frequently in lieu of "education."

The idea that nature recreation as an experience requires skilled leadership is developed from the standpoint of experiences that arise in the home, the community, in summer camps, on trips and trails, and in connection with conservation. Conservation, the author calls a challenge to the educator. Conservation is a "way of living"—not a formula from a textbook.

The latter half of the book, which the author calls "Applied Nature Recreation," is packed with outlines, suggestions, ideas, lists, games, directions, receipts, for all kinds of nature recreation occasions and activities. If one can stand this bombardment of ideas without allowing some of them to germinate into activating enzymes he might just as well be counted out of a great social movement of which this book is the herald.

The book as a whole is replete with ideas, experiences, and convictions regarding nature recreation culled from the author's long and rich experience as a leader in this field. While its abrupt style makes it hard reading in places, it is written with such evident earnestness of purpose as to commend itself as an authoritative document of the first order, and a storehouse of ideas that will repay the searcher many-fold.

It is like a sizzling beefsteak over the campfire—its aroma is good, and its assimilation a satisfaction. The book likewise has in it those qualities of spontaneity and enthusiasm which are so much a part of the character of its author, that it should add materially to the already large number of people who are happy to count themselves of Cap'n Bill's fellowship.

### *Briefly Noted*

*John Kieran's Nature Notes.* Every American, man, woman and child, has heard of Mr. Kieran. In this little

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volume he has set down his thoughts on 50 natural-history topics. Birds, plants, mammals, and insects pass in the parade, each receiving a paragraph's notice. Many people who have hitherto avoided nature will enjoy it more for having read these pages. The accompanying illustrations by Fritz Kredel have much in common with the pictures of nineteenth-century textbooks. (Doubleday Doran and Co., New York, \$2.00.)

*A Field Key to Our Common Birds* by **Irene T. Rorimer**. The first part of this handy pocket guide is devoted to a 61-page 'key' by which birds in the field may be properly identified according to their habitats, size, shape, etc. The emphasis on habitats is the chief feature of the book. The second part (85 pages) is similar to Peterson's 'Field Guide,' the descriptions being shorter, and with the addition of the status and habitats of birds in northern Ohio. Over 130 species are included, most of them illustrated with excellent drawings by Peterson. (Cleveland Museum of Natural History, \$1.50.)

*Trail of an Artist Naturalist* by **Ernest Thompson Seton**. This is the autobiography of one of America's most widely read naturalists, whose animal stories were best sellers a generation ago and still rank among the best ever written. The book describes Mr. Seton's adventuresome life on a Canadian farm, his turbulent fight for recognition as an artist, and the fame which he finally won for himself as an artist-naturalist. Wildlife of the West is vividly illustrated by over 75 sketches. (Charles Scribner's Sons, New York, \$3.75.)

*Conservation of American Resources* by **Charles N. Elliott**. Written in simple language, this volume is designed as a basic text in a conservation course or for use as a supplementary reader and

source book in a school program where conservation problems are correlated with other subjects. The material is presented in twelve units, emphasizing America's renewable resources (forests, soil, wildlife, water). Innumerable photographs are certain to awaken the students' interest. Near the end of its 672 pages, activities are suggested, other references indicated, conservation agencies listed, and a glossary added. (Turner E. Smith and Co., Atlanta, Ga., \$1.80.)

*American Songbirds* by **Maitland Edey**. The reprinting of 29 color plates from the old 'Birds of New York' will provide a bargain for all those who cannot afford more expensive illustrated textbooks. One hundred and thirty-six species are described, ostensibly for children, but more mature beginners will also find the author's brief descriptions of interest. A short introduction contains some helpful hints on bird study. While the plates themselves show signs of age, the book is admirably designed and executed. A fine gift for children. (Random House, New York, \$1.00.)

*American Wildflowers* by **Cicile Hulse Matsch**. Eighteen beautiful plates from the New York State book on wild flowers are reproduced in color in this engaging volume. In addition to the book's 28 pages, its end papers are filled with drawings and notes on 24 additional species. The text is in large type and admirably designed for young readers. The flowers selected are common in the East and widely distributed. It is hard to see how such a work can fail to arouse in young people an added interest in American wild flowers and a desire to learn more about them in nature. There is nothing cheap about the book except the price. (Random House, 50 cts.)

*For the convenience of our readers, all books listed above, with the exception of State and Federal publications, may be purchased from the Service Department of the NATIONAL AUDUBON SOCIETY.*



## The Changing Seasons

By

LUDLOW GRISCOM



WEATHER conditions have been remarkably variable in the United States, making generalizations difficult. As regards the second half of the fall migration, the Atlantic seaboard and Ohio enjoyed mild and uneventful weather on the whole. A sharp cold wave October 19-22 caused a marked rush of migrants from New England to New Jersey, and a severe cold wave and snow in the same area signaled the technical arrival of winter in late November and early December. In the Central States, October was warm, November cold. From Montana to Minnesota there was a great Armistice Day blizzard, which caused loss of life both to hunters and birds, and drove all birds southward in a great and sudden rush. On the Pacific coast, October was warm and November relatively cold. December was a mild month practically throughout the country. January was cold and snowy in New England, normal to mild elsewhere. Heavy rains and wet weather characterized the Gulf coast from western Florida to Texas and north to Missouri in December and January and also California.

None of the 'Season' editors expatiate on the excellence of general birding during the fall migration, due to the lack of contrasts. The cold weather that occurred suddenly in one part or another of November almost throughout cleared out a great deal of bird life, leaving the December bird life low, and the mild-

ness of that month caused little improvement. January improved markedly only in New England, thanks to cold and heavy snow.

One pleasant fact is that the winter was not hard on the birds, a needed change from the mortality of the past one. Mr. Weston feels convinced that the great scarcity of bird life in western Florida is correlated with last winter's devastation, and he notes that some of the common species now rare are just those whose falling off in numbers has been a matter of comment for a year. Texas also comments on the scarcity of some land birds.

The reports on the waterfowl are encouraging. On the Atlantic seaboard, the Carolinas report 'normal' numbers, slight increases in the New York and Philadelphia regions. But very marked increases are reported from western Florida, Texas, and the northwest Pacific coast. Ohio had a marked flight of Geese, chiefly Blue and Snow, October 19-22. Brant showed a slight increase in New England and a marked increase on the Jersey coast. There were more King Eiders than usual off Long Island. Massachusetts completely missed the spectacular concentrations of White-winged Scoters off Cape Cod this fall. Exceptional occurrences are an American Scoter at Monterey, Calif., and the first record of the White-winged Scoter in Aransas Bay, Texas.

Marked flights of other groups: Red-

## THE CHANGING SEASONS



Photo by Allan D. Cruickshank  
*A Scissor-tailed Flycatcher astonished bird students on Long Island in November.*

throated Loon (Massachusetts and Long Island); Western Grebe (Puget Sound Region); Forster's Tern (New York, best ever); Razor-billed Auk (Long Island to North Carolina); Brünnich's Murre (Massachusetts); Rough-legged Hawk (Dakotas to Missouri, contrasted with marked scarcity on the Atlantic coast); Sandhill Crane, at least a thousand during a fall census in western Minnesota. The shore-bird flight continued good and lasted very late throughout the country; southern stations now comment on the increase in Marbled Godwits, and North Carolina reports an Avocet on December 27. There was an irruption of Short-eared Owls in Missouri, a flight of Lapland Longspurs from Massachusetts to southern New Jersey, and the Cedar Waxwing flooded southern New England in large flocks in December and January.

The drift of western species eastward continues. There were an astonishing number of November records of the

Arkansas Kingbird from Massachusetts to Philadelphia. Texas also comments on the number of 'western' species. Among these were four records of the Vermilion Flycatcher, and it is of great interest to note the capture of one in western Florida in late December. Quite the most astonishing occurrence was a Scissor-tailed Flycatcher on Long Island November 22.

The erratic northern Finches always arouse attention and interest, and the past winter was noteworthy in that every possible species was on the move. A great flight of Pine Siskins reached south to North Carolina and Tennessee. A fair flight of White-winged Crossbills invaded New England, south to the New York border, and also Ohio. Red Crossbills in small numbers were reported along the Atlantic seaboard from Maine to Philadelphia, and also Michigan and Ohio. Pine Grosbeaks were common in northern New England, south to eastern Massachusetts. Redpolls were present, but very thinly scattered in New England, commoner farther inland in southern Ontario and western New York, south to Long Island; also in Minnesota. A very few Evening Grosbeaks reached the Atlantic States from Maine to New Jersey. By contrast the Purple Finch, though widely scattered over its extensive winter range, is not reported anywhere in numbers.

Bohemian Waxwings are reported only from the Dakotas. There were practically no Snowy Owls, few Shrikes, and no interesting northern Owls. In the late fall Hawk flights, there were hardly any Goshawks in New England, more than usual in northern New Jersey; these birds seem to have disappeared. In marked contrast to the Finches, there was no failure in the food supply to cause a single raptorial bird to have a winter flight.—*Cambridge, Mass., March 8, 1941.*

## AMONG THE AUTHORS

**Glover M. Allen** (p. 151) is a name well known and admired by every ornithologist and mammalogist in the country, and his word carries unquestioned authority on either subject. His association with Harvard University has lasted for more than forty years—first as a student in the class of 1901, as candidate for Ph.D. in 1904, and practically since the latter date as Curator of Mammals at Harvard's Museum of Comparative Zoölogy and Professor of Zoölogy at the University.



Dr. Allen's search for birds and mammals has taken him on three expeditions to Africa, to the West Indies, Brazil, and Australia. Since 1936 he has edited *The Auk* (official quarterly publication of the American Ornithologists' Union), which has gone hand in hand with the development of scientific ornithology in America for the last fifty-seven years. New Englander Allen has also found time to be the author of 'The Birds of Massachusetts' (with R. H. Howe, Jr.), 'Birds and Their Attributes,' and numerous papers on birds and mammals.

**George Miksch Sutton** (p. 161) is no newcomer to AUDUBON MAGAZINE as either artist or author. Artist-ornithologist Sutton devotes much of his time to painting birds from life, and his illustrations in color are to be found in several of the best-known bird books (the latest, 'Birds of Western Pennsylvania'). The wanderings of bachelor Dr. Sutton (Ph.D., Cornell, 1932) are almost as diversified as the movements of some of our most highly migratory birds: Nebraska-born, college years saw him at Texas Christian University, Bethany (W. Va.) College, and the University of Pittsburgh (where he also taught ornithology in 1925); his numerous expeditions have taken him several times to Hudson Bay, to many widely scattered regions of this country, to British Columbia, and to Mexico in the spring of 1941. For the past ten years he has been Cornell University's Curator of Birds. Author-ornithologist Sutton is known for his 'Introduction to Birds of Pennsylvania,' 'Exploration of Southampton Island, Hudson Bay,' 'Eskimo Year,' 'Birds in the Wilderness' and contributions to the periodical literature.

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